Medical Library NOV 2 1944

The ILLINOIS Medical Journal

VOL. 86 NO. 4

October, 1944

In This Issue

Transurethral Drainage of the Seminal Vesicles in Seminal Vesiculitis

✦

The Bedside Diagnosis of Parenchymatous Liver Disease

✦

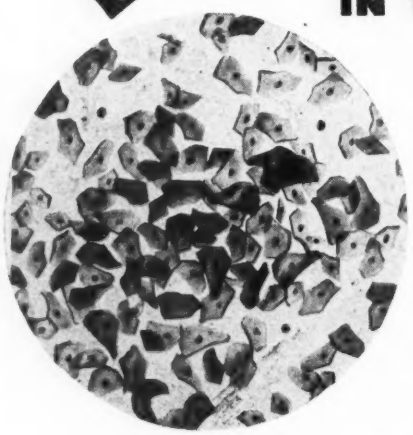
(See page 35 for Table of Contents)

OFFICIAL JOURNAL OF THE ILLINOIS STATE MEDICAL SOCIETY

EFFECTIVE

Oral Therapy

IN THE MENOPAUSE



Leading clinicians emphasize the importance of replacing injections with oral therapy as soon as subjective menopausal symptoms have been brought under control.

Oral therapy with TABLETS ESTROGENIC HORMONES, R & C, has been shown to produce full estrogenic replacement, with relief of cardiovascular and psychogenic symptoms, when used in this clinical relationship. In mild cases, the Tablets may be equally effective as initial therapy. The efficacy of the preparation is further substantiated by tissue changes, as evidenced by strongly positive vaginal smears.

Prepared from mixed natural estrogens—extracted from pre-natal mares' urine in our Jersey City laboratories, and rigidly standardized—TABLETS ESTROGENIC HORMONES, R & C, impart a gratifying sense of well being (not associated with the use of nonsteroid chemicals with estrogenic activity). A prescription for these Tablets reduces demands on the time of the busy physician. The cost to the patient is moderate indeed.

Packaging: In bottles of 50, 500 and 1000—1000 I. U. per tablet; and 30 and 100—5000 I. U. per tablet.

Also Available: ESTROGENIC HORMONES, R & C, in oil solution—a mixture of natural estrogens in a highly refined vegetable oil, for intramuscular injection, is supplied in strengths of 2000, 6000, 10,000 and 25,000 I. U. per c.c. Each strength is marketed in boxes of 6, 25 and 50—1 c.c. ampuls; also in multidose vials containing 5 c.c., 10 c.c., and 20 c.c.

REED & CARNRICK JERSEY CITY 6 NEW JERSEY

TABLETS ESTROGENIC HORMONES, R & C

Entered as Second-Class Matter July 21, 1919, at the Post Office, Oak Park, Illinois, under the Act of March 8, 1879. Acceptance for mailing at special rate of postage provided for in Section 1102, Act of October 8, 1917, authorized July 15, 1918. Office of Publication, 715 Lake Street, Oak Park. Ill.

The Illinois Medical Journal

October, 1944

VOL. 86, NO. 4

Official Journal of the Illinois State Medical Society

EDITOR — Harold M. Camp. EDITORIAL BOARD — James H. Hutton, Chairman, Frederick H. Falls, Josiah J. Moore, Edwin M. Miller, Chauncey C. Maher, Harry S. Gradle, Harry Culver, Walter Stevenson, Raymond W. McNealy.

Editorials

THE HEALTH OF THE ARMY

In a recent nation wide broadcast Brigadier General James S. Simmons, Chief, Preventive Medicine Service, U. S. Army, said that the disease death rate among American soldiers of World War II is the lowest ever recorded for the U. S. Army, and only one-twentieth as high as that of World War I. Although our troops have been exposed to practically every known disease, there have not been any great epidemics among American soldiers in this war. General Simmons stated that U. S. troops have experienced every kind of climate and have lived among primitive peoples of the tropical world but in spite of these handicaps, the sickness rate has been comparatively low and the diseases mild.

He said that this is not a matter of luck, but the result of the effective military preventive medicine program developed by the Surgeon General and carried out by the Medical Department of the Army. Thousands of physicians have been trained under medical military supervision in disease prevention. Many types of conditions rarely encountered in civilian practice are outlined, and these medical officers follow the soldiers and guard their welfare from the time they are inducted until they are ultimately discharged from service.

The extensive program of vaccination of soldiers has been responsible for the almost total elimination of many diseases which formerly took a heavy toll in warfare. Although some cases of pneumonia, influenza and meningitis have been encountered, the death rate has been unusually low and relatively insignificant. Malaria has been well controlled with few deaths. The preventive medicine program in the Army has been highly important and stressed far more than ever before in time of war. With the plan of providing first aid on the battlefields, and the immediate transportation of the casualties by air to a base hospital, illness has been minimized and death rates lowered.

Major General Norman T. Kirk, Surgeon General, U. S. Army, recently returned from an inspection trip in the European theater. He was greatly impressed with the health of the Army, the care given to the casualties, and the extremely low mortality rates. Much credit was given to the Army Medical Services, all of which are under his direct supervision.

On August 21, the first shipment of whole blood from the United States to soldiers wounded in France was made by the U. S. Army Medical Department. Daily shipments have been made since that time. The first week 250 pints of whole blood, type "O", were sent; the second week, 500 pints, and it is stated that 750 pints daily will be shipped in the immediate future. Blood is prepared for shipment on the day it is drawn, and 21 hours after it leaves the United States, it is available for transfusion in France.

The blood is collected by the Red Cross for

the shipments in response to appeals from Major General Kirk as Surgeon General of the U. S. Army, and Rear Admiral Ross T. McIntyre as Surgeon General of the U. S. Navy.

It is a well known fact that although the giving of plasma is a life saving measure in shock and also following many types of injuries, it does not entirely replace the use of whole blood in cases with a lowered blood count. It is quite possible that within a relatively short time larger quantities of whole blood will be available for these daily shipments to the battlefields and to base hospitals along the fighting fronts. In order to make this plan effective and to properly preserve blood for transportation across the ocean, new developments in the preservation and refrigeration of whole blood have been worked out and placed in operation.

During the present war many changes have been made in the methods by which casualties receive early attention — such as relief of pain, treatment of shock, etc. Then, with the many additions to medical knowledge concerning immunization, therapy, surgical technique, etc., the American soldier today is receiving the best type of medical care ever given to men at war.

It should be quite obvious to all that the medical profession has responded whole heartedly to all appeals of the government for medical officers in a quantity sufficient to render this type of care to service personnel. In most states today there are many communities which do not have a resident physician. Consequently there is a longer delay in these communities getting a doctor when one is needed.

The American people as a whole have come to the realization that the best of care must be given to service men and that civilian needs are secondary, even though equally essential. With so many young men in service from every community in the United States, and with all communities proud of their response to the call for men, those remaining at home are willing to assume additional sacrifices in order that this enviable health record may be maintained.

THE 1944 POLIOMYELITIS EPIDEMIC

Information recently released shows that up to September 9th the total number of poliomyelitis cases for the country as a whole for the

ILLINOIS STATE MEDICAL SOCIETY

GENERAL OFFICERS, 1944-1945

PRESIDENT ..... EVERETT P. COLEMAN, Canton
PRESIDENT-ELECT .... ROBERT S. BERGHOFF, Chicago
1ST VICE-PRESIDENT ..... HARRY M. HEDGE, Chicago
2ND VICE-PRESIDENT ... WALTER C. BLAINE, Tuscola
SECRETARY-TREASURER . HAROLD M. CAMP, Monmouth

THE COUNCIL

L. J. Hughes.....1st District, Elgin 1944
E. C. Cook.....2nd District, Mendota 1944
Oscar Hawkinson...3rd District, Chicago 1946
Percy E. Hopkins...3rd District, Chicago 1944
E. W. Mueller.....3rd District, Chicago 1945
Chas. P. Blair.....4th District, Monmouth ..1946
Ralph P. Peairs.....5th District, Normal 1946
Walter Stevenson....6th District, Quincy 1945
I. H. Neece.....7th District, Decatur 1946
C. E. Wilkinson....8th District, Danville 1946
Andy Hall.....9th District, Mt. Vernon ..1945
G. C. Otrich.....10th District, Belleville 1945
Ed. S. Hamilton...11th District, Kankakee 1944
Edward H. Weld....At Large, Rockford 1946
Chas. H. Phifer.....At Large, Chicago 1945
J. S. Templeton.....At Large, Pinckneyville ..1944
Chairman of the Council.....Percy E. Hopkins

ILLINOIS MEDICAL JOURNAL

Harold M. Camp, Monmouth.....Editor
L. E. Malley, Chicago. . .Managing Editor & Business Mgr.

GENERAL COUNSEL

Edward W. Rawlins.....77 West Washington St., Chicago

LEGISLATIVE COMMITTEE

James H. Hutton, Chairman....30 N. Michigan Ave., Chicago

EDUCATION COMMITTEE

R. R. Ferguson, Chairman..4013 N. Milwaukee Ave., Chicago
Miss Jean McArthur, Secretary.30 N. Michigan Ave., Chicago

PERMANENT COMMITTEE ON ARCHIVES

D. D. Monroe, Chairman.....Alton
C. E. Black.....Jacksonville
P. J. McDermott.....Kewanee

SCIENTIFIC SERVICE COMMITTEE

Robert S. Bergoff, Chairman..30 N. Michigan Ave., Chicago
Harold M. Camp, Secretary.....Monmouth

JOURNAL COMMITTEE

Percy E. Hopkins, Chairman.....800 W. 78th St., Chicago
Harry J. Stewart, Secretary.....715 Lake St., Oak Park

Outside of editorial or allied views or statements that are the authoritative actions of the Illinois State Medical Society, the organization denies responsibility for opinions and statements published in the ILLINOIS MEDICAL JOURNAL. Views expressed by the various authors and views set forth in various departments in the JOURNAL represent the views of the writers.

State Society will pay no bills for legal services except those contracted by the Committee. Notify the Chairman at once. Do not employ attorneys.

Send advertising copy, cuts and all communications relating to advertising to ILLINOIS MEDICAL JOURNAL. 30 N. Michigan Avenue, Chicago.

Original articles and membership correspondence to Dr. Harold M. Camp, Monmouth, Ill.

Society proceedings and news items and changes in the mailing list to Managing Editor, 30 N. Michigan Ave., Chicago 2, Illinois.

Subscription price of this JOURNAL to persons not members of the Illinois State Medical Society is $3.00 per year, in advance, postage prepaid, for the United States, Cuba, Porto Rico, Philippine Islands, Hawaiian Islands and Mexico. $4.00 per year for all foreign countries included in the postal union. Canada. $3.50. Single current copies, 50 cents.

year was 10,959. Apparently the peak of the epidemic has been passed and the incidence of the disease is tapering off. It was stated by the National Foundation for Infantile Paralysis that the heaviest incidence of cases for the nation occurred in the week of September 2nd when 1,683 cases were reported to the U. S. Public Health Service.

It was stated in this release that this year's total for the first 36 weeks is 2,030 cases higher than for the same period in 1931, which to date is the second highest epidemic year. During the peak of the epidemic the National Foundation sent seven doctors, 50 physical therapists and many supplies as well as much money, out to care for the needs of the sufferers. The American Red Cross likewise cooperated in sending approximately 700 nurses to supplement local facilities in the epidemic areas. Many respirators were used, and it was stated that all 26 of the respirators owned by the National Foundation are still in use.

The War Production Board's Office of Civilian Requirements recently announced that hospitals of the United States have been assured enough supplies and equipment to treat every one of the cases which has been reported, and two and one-half times that number if they should develop. The rapid development of the epidemic in June in North Carolina, and in Kentucky, as well as many cases in other states, gave warning of the necessity for prompt action on the part of the Office of Civilian Requirements. The Office promptly put hospitals in touch with sources of equipment and supplies, and the manufacturers in touch with materials.

Many grants have been made by the National Foundation for virus research, after-effects research, education, epidemics, and for the Warm Springs Foundation and Tuskegee Institute. With the ever-increasing number of research workers devoting their time to the many considerations of poliomyelitis it seems quite logical to believe that eventually means will be developed which will permit the cure as well as the prevention of this dreaded disease.

There is an ever-growing belief that infection with poliomyelitis virus is usually by way of the alimentary tract. Yet many workers through research endeavors have shown that nasopharyngeal secretions are an important factor in the spread of the causative virus. Faber and his associates at Stanford University, following extensive tests, believe that poliomyelitis as an air borne disease acquired by inhalation of contaminated air, deserves more consideration.

Following each epidemic more information is available, and it is hoped and believed that in the not too distant future more definite knowledge as to the mode of transmission as well as curative treatment will be developed.

COST OF VITAMIN PREPARATIONS

During recent years, and increasing each year, we have seen the American people spending hundreds of millions of dollars for vitamins. Through the press, over the air and from others who take them, many people have suddenly felt the need of vitamins, believing that everyone, to be healthy, must supplement their daily diets with a liberal supply. One wonders how our forefathers who discovered, then developed this country, ever survived the hardships of their pioneer days without even a limited knowledge of vitamins, and without having them available for daily consumption.

Today vitamins can be purchased from drug, grocery or department stores as well as from most of the houses sending out the four pound catalogues. It is quite interesting to note the comments made by a number of the commercial announcers over the air in which several interesting statements are made. One of these, that the preparation meets with the standards as set by a group of doctors, and the other that anyone wanting advice concerning vitamins should consult his druggist. Rarely is the physician mentioned in this connection, yet he should be the one who can best determine the needs of his patients.

Several concerns formerly making various types of cold medicines and other proprietary remedies are now putting out a full line of vitamin preparations which one would believe, when listening to their talks, are superior to all other preparations of a similar nature.

An interesting article appeared in the September 2nd Journal of the American Medical Association giving data accumulated through the Council on Pharmacy and Chemistry on the comparative cost of vitamin mixtures. The daily vitamin requirements according to the recom-

mendations of the National Research Council and those recognized by the Food and Drug Administration are presented for vitamins A, D, B_1, B_2, Niacin amide and C (ascorbic acid). A list of 25 brands of vitamin mixtures are presented showing the vitamin content of each, then the cost per package and the rate per 100 tablets or capsules.

With but a slight variation in vitamin content, the price per 100 varied from $2.70 to $8.00. This is indeed a most interesting table and we would urge physicians who are consulted by patients in reference to possible supplementation of diet with vitamins, to have same available so that both the vitamin content and the cost to the patient may be given proper consideration.

It is stated in the article that none of the preparations listed stands accepted by the Council for inclusion in New and Non-official Remedies, and that the advertising claims offered on behalf of some of the mixtures preclude any possibility of acceptance.

That there are some patients with a definite avitaminosis no physician will deny, but it still seems quite logical to believe that the average individual consuming a normal well balanced diet each day, is not actually in serious need of additional vitamins.

AMERICAN MEDICAL ASSOCIATION WASHINGTON OFFICE

On September 1 the Washington office of the Council of Medical Service and Public Relations of the American Medical Association began its activities. With Dr. Joseph S. Lawrence in charge, the office is located at 1835 1st Street, N.W. Dr. Lawrence for many years has represented the Medical Society of the State of New York at Albany and is a highly capable man for this important position.

Requests for information or other assistance in relation to material available at the Washington office may be procured by writing to Dr. Lawrence at the above address. Information has been received to the effect that the Journal of the A.M.A. will report on the activities of the Washington office from time to time.

Physicians throughout the country will be pleased to receive this information and to learn that at last the Washington office is a reality and that if it is conducted in accordance with the wishes of the profession at large, it will be a factor for much good in both giving legislators and others desiring it, reliable information on the progress of Medicine and what American Medicine really is, then it should be of inestimable value to the physician himself if he can get reliable information on what is going on at the Nation's capitol and especially concerning proposed legislative activities which may affect in some way or other, medical practice.

PHOTOS OF MEMBERS FOR PERMANENT RECORDS

Members of the Illinois State Medical Society will soon receive a visit from Mr. Joseph Merante who has taken photographs of the Council, officers and several committees, and who is at present engaged in taking photographs of the individual members of the society.

There will be no charge to the physician for the photograph taken nor will there be any obligation to purchase portraits from Mr. Merante. It is hoped that the membership of this Society will cooperate in this endeavor so that in the near future photographs of the entire membership will be among the permanent records.

SUBACUTE BACTERIAL ENDOCARDITIS TREATED WITH PENICILLIN

The effective treatment with penicillin of a case of subacute bacterial endocarditis (bacterial infection of the membrane lining of the heart) is reported in *The Journal of the American Medical Association* for September 23 by B. C. Collins, M.D., Memphis, Tenn. Within three days after treatment was started the temperature had dropped to normal.

The large movements of population because of the expansion of defense industries, the inadequacy of housing facilities in many parts of the country, and the accelerated work tempo demanded in many industries lead health officials in this country to expect an increase in the mortality of tuberculosis such as has been experienced in Great Britain. Last year there was a slight rise in tuberculosis mortality in New York City but in 1942 this increase appears to have halted. The number of deaths due to tuberculosis, however, is still so large that control measures should in no way be abated.—Bull. New York City Dept. of Health, Feb., 1943.

Correspondence

ILLINOIS DOCTOR IN SAIPAN INVASION

By Second Lieutenant Jim G. Lucas, formerly of the Tulsa Tribune, a Marine Corps Public Relations Officer.

Saipan, Marianas Islands — (delayed) — "This is the most beautiful thing I have ever seen."

There was no beauty in what he actually saw. The beaches were lined with the broken bodies of men who had been whole when they awoke at dawn. There was blood and death amid the constant rumble of heavy artillery which the enemy poured down from the hills.

Beauty lay in the speed with which these damaged bodies were pulled back from the mounting fury of battle; the quiet, orderly precision with which heroic doctors and corpsmen, trained for peace but tempered in war, mocked the confusion and chaos which swirled about them; the unwavering demands of a creed which caused men to risk — and often to lose — their own lives to save that of a stranger.

Major credit for conduct of one of the most successful evacuation stations on Saipan's bloody beaches is given a pint-sized Indianan, Lieutenant Max Long, a Navy Doctor, of Marian, Ind., who four years ago graduated from his state University's school of medicine.

Assisted by Lieutenant (jg) Charles B. Mueller of 630 East First So. Street, Carlinville, Ill., Doctor Long came ashore four hours after the first Marines had come to Saipan, and remained on the beaches, frequently under heavy shellfire, to evacuate the wounded until hospitals could be set up ashore.

The story of Doctors Long and Mueller is a story which can only be had by talking to others who saw them work.

Doctors and corpsmen swarmed over amphibian tractors as soon as they arrived from the front, administered blood plasma to two of the more seriously hurt, set splints for a Marine whose arm had been shattered, and had the tractor in the surf, headed back to the transports, five minutes later.

Many times Marines, caught by enemy shells deep in fighting territory, are on the operating table aboard a hospital ship three hours later.

More than 500 wounded men were taken off Saipan from Doctor Long's evacuation station alone in the first 24 hours of the battle; 1,050 in the first four days.

Doctors Long and Mueller were chosen by Naval Commander W. C. Baty, chief surgeon for the Fourth Marine Division, to man an evacuation station "until we capture enough soil to safely set up field hospitals."

With them went 20 hospital corpsmen and ambulance drivers, at least one of whom paid with his life in performance of his duty.

Doctor Long set up his station near a road junction at the beach, ignoring the obvious danger that enemy guns undoubtedly would register upon any concentration of traffic. His reason! Here would be the best chance to collect wounded as they were brought back to the front, and to find them transportation out to sea.

Enemy shells peppered the area. A nearby aid station was hit, killing several wounded. Doctor Long "guesses we were lucky". He escaped with a score of near misses.

Navy Ensign Frank Alderman describes a visit to Doctors Long and Mueller.

"Shells began coming close, and Doctor Long yelled at me! "Better get out, they're aiming at us! I assumed he'd go with me. I took his advice and made fast time down the beach. I looked back to see Doctor Long climbing aboard a tractor, directing his men in loading the wounded. As he stood there, shells were bursting in the water only a few yards in front."

Commander Baty said he frequently saw Doctor Long moving about on the beach, caring for the wounded, during the fury of an enemy shelling.

"Quite often," Commander Baty said, "he was the only man out of his foxhole."

Wounded Marines were usually given first aid treatment on the line, but the ride across the rough Saipan terrain had, in some cases, caused a relapse. Upon Doctor Long's decision depended, in many instances, life and death. Before the majority of them could be sent out across the reefs, he and his men gave them new injections of morphine for relief of pain, new sulfa dressings. Without it, they could not have survived.

Most punishing was the necessity of deciding which man had the best chance of survival, for sometimes there was not enough room in the tractors for all the wounded waiting on the beach. It was often Doctor Long's duty to order the removal of one man to make room for another. Those left behind were certain to die on the rough ride across the reefs — men with only a few minutes of life left in their bodies. In all, more than 30 Marines died on the beaches, despite efforts of the Doctors to save them.

Frequently, at night, wounded were brought in, and were kept at the evacuation station until the boats were brought in at dawn. It was impossible for the doctors to sleep. If lives were to be saved, constant vigilance was required.

In addition, enemy shelling killed and wounded scores of men in the area of the beach evacuation station, all of whom were treated on the spot. Some were so hopelessly wounded that evacuation was impossible.

Doctor Long said his ambulance drivers went so far beyond battalions aid stations at the front lines it was necessary to send in tanks and half-tracks to cover their withdrawal. One driver came back, horribly wounded, in the ambulance he had taken to the front.

Back to the beach they were brought, to funnel through the evacuation aid station, receive fresh treatment, and be sent back to sea.

WARREN F. DRAPER PROMOTED TO MAJOR GENERAL

Announcement has just been made of the promotion of Brig. Gen. Warren F. Draper to the rank of major general. General Draper, a graduate of Harvard Medical School, Boston, in 1910, began as assistant Surgeon, United States Public Health Service, in that year. During the first world war he was assigned to the Army and had charge of the extracantonment sanitation in the Norfolk, Va., area. Since then he has served as assistant surgeon general in charge of the states relation division of the Public Health Service, and for three years he served as state health officer of Virginia. In 1939 he was named assistant to the Surgeon General under Dr. Thomas Parran and later became deputy surgeon general. In the spring of this year he was assigned to duty with the Army in the grade of brigadier general at the request of Hon. Henry L. Stimson, Secretary of War. At present General Draper is chief of the public health branch of civil affairs in the European theater. This branch is responsible for the care of ill and injured civilians in the battle area, helps distribute medical supplies and gives advice on prevention and control of disease among civilians and animals. General Draper was a member of the House of Delegates of the American Medical Assoeiation from 1925 to 1943 inclusive.

URGE SPECIAL MICROSCOPIC TESTS BEFORE TREATING GONORRHEA WITH PENICILLIN

Dr. C. J. Van Slyke of the Public Health Service Venereal Disease Research Laboratory, Staten Island, N. Y., and Dr. S. Steinberg of the U. S. Marine Hospital, New York City, recently reported the possibility of overlooking syphilis symptoms in gonorrhea patients treated with penicillin in patients who have both diseases. This can be avoided, however, if special microscopic tests are made before penicillin is used, and if blood tests are made after penicillin treatment has been completed. The masking effect of penicillin on syphilis symptoms is due to the fact that the relatively small amounts of penicillin required to cure gonorrhea are sufficient to cause disappearance of the spirochete germs of syphilis from syphilis lesions, although not sufficient actually to cure syphilis. When serum from the lesions is examined under a special microscope after penicillin has been used, the spirochetes will not be seen, and the examining doctor may be misled to conclude that the patient was not infected with syphilis. Making the microscope examination before treatment with penicillin prevents this possible error. A blood test for syphilis some time after the treatment of gonorrhea has been completed is advisable, because blood tests do not always reveal very new syphilis infections immediately after they have been acquired.

Medicine's Role in the War Effort

REORGANIZE AIR SURGEON'S OFFICE

The War Department recently announced the partial reorganization of the Air Surgeon's office and reassignment of key officers of the Medical Service, Army Air Force. Brig. Gen. Charles R. Glenn, surgeon of the Army Air Force Training Command, was assigned deputy air surgeon on the staff of Major Gen. David N. W. Grant, the Air Surgeon, effective August 15. He succeeded Col. Walter S. Jensen, who has been assigned to an important post overseas. Other new assignments include those of Col. Henry C. Chenault, executive officer, who has been named director of professional services, Col. Oliver K. Niess, base surgeon and commanding officer of the Regional State Hospital, Mitchell Field, N. Y., who has been named director of administration, and Col. Richard L. Meiling, who will act as special assistant to the Air Surgeon.

The reorganization places the Director of Administration over the Operations, Personnel and Supply Divisions, while the Director of Professional Services will supervise the Professional, Aviation Medicine, Convalescent Training, Research and Statistics Division. Two divisions have received new designations. The Medical Services Division will be called the Professional Division, and the former Professional Division will be known as the Aviation Medicine Division.

The status of the division chiefs remains unchanged. The chiefs are Col. George L. Ball, Aviation Medicine Division; Col. Howard A. Rusk, Convalescent Training Division; Col. George F. Baier III, Operations Division; Col. E. L. Gann, Personnel Division; Col. William P. Holbrook, Professional Division; Col. Lloyd E. Griffis, Research Division; Col. Joseph Berkson, Statistics Division; Col. Gustave E. Ledfors, Supply Division, and Major William H. Perkins, Office Services.

☆ ☆

NAVAL HOSPITAL IN ENGLAND TREATS HUNDREDS OF WOUNDED FIRST TWO WEEKS OF INVASION

At a U. S. naval hospital in England, several hundred U. S. casualties from France were treated with the loss of only 1 man. Formerly a British hospital, this institution is a quarter of a mile long, is three stories high with more than a hundred wards, operating rooms and laboratories, and is maintained in a state of constant readiness. Sixty outbuildings can be utilized in emergencies, almost doubling the normal capacity. The hospital maintains a staff of 50 doctors, 12 hospital corps officers serving as technicians, 98 trained navy nurses and 400 skilled hospital corpsmen. Another 180 men are engaged in maintenance. On D day the supply of medicine and drugs included 537,500 cc. of plasma, 398,500 cc. of other intravenous solutions, 794 gallons of alcohol, 50,000 tablets of sedatives of various types, 143,500 sulfonamide tablets and 71 pounds of sulfonamide powders, 50,300,000 units of penicillin, 299 pints of medicinal whisky, 4,958 bandages of all types, plus orthopedic equipment including 5,326 pounds of cotton, 2,500 pounds of plaster of paris, 100,000 yards of crinoline and 200 rolls of sheet wadding.

Each casualty on arrival at this hospital is examined separately by the chiefs of surgery, medicine and neuropsychiatry to determine as quickly as possible the preliminary treatment necessary and whether surgery is needed. After preliminary examinations and treatment each man is bathed, shaved, issued clean clothes and put into a clean, comfortable bed in rooms staffed twenty-four hours a day.

Complete arrangements for the transfer of this hospital from British to American hands began last fall, when Rear Admiral Luther Sheldon Jr., Medical Corps, U. S. N., assistant chief of the navy's Bureau of Medicine and Surgery, arrived in the United Kingdom. Early in the spring Capt. C. J. Brown, formerly of Philadelphia, brought his staff over to assume command. Capt. J. W. Miller, formerly of Washington, D. C., is executive officer. Other members of the medical corps on the staff are Capt. James M. Faulkner, Brookline, Mass., chief of medicine; Capt. A. H. Weiland, Coral Gables, Fla., chief of orthopedic surgery; Comdr. Henry W. Hudson, Waban, Mass., chief of surgery, and Comdr. Robert T. Baldridge, Providence, R. I., chief of the urology department.

☆ ☆

A girl who went out with a soldier realized ten minutes later that he was A.W.O.L.F.

NAVY AWARDS AND COMMENDATIONS

Captain Lockhart D. Arbuckle

Capt. Lockhart D. Arbuckle, now senior medical officer at the Naval Training Center, Great Lakes, Illinois, has been awarded the Legion of Merit "for exceptionally meritorious conduct in the performance of outstanding services to the government of the United States as division surgeon of a Marine division during the planning for and the operations against the Japanese on Bougainville, British Solomon Islands, from Sept. 10, 1943 to Jan. 4, 1944. During this period Captain Arbuckle rendered invaluable assistance to the commanding general in executing the operation under the most adverse conditions. When the preparations for the establishment of the beachhead were begun, owing to his highly efficient supervision of the medical facilities all troops entered the combat areas in excellent physical condition. As a result of his exceptional professional skill and constant attention to duty, medical services were administered to all the wounded, and despite the trying conditions arising from tropical climate, losses from sickness and battle wounds among the troops were held to a minimum. His superior knowledge and sound judgment contributed materially to the success of the campaign and were in keeping with the highest tradition of the United States Naval Service." Dr. Arbuckle graduated from the Medical College of Virginia, Richmond, in 1915 and has been in the service since May 28, 1917.

Lieutenant William B. Neal Jr.

The Navy and Marine Corps Medal was awarded to Lieut. William B. Neal, formerly of Chicago, "for distinguishing himself by heroism while attached to the U. S. S. *Lansdale* during and following an attack by enemy aircraft off the coast of Algeria on the night of April 20, 1944. When the *Lansdale* was damaged and the ship subsequently sank, Lieutenant Neal was severely injured by the shock of the initial explosion but promptly commenced rendering first aid to other casualties of the disaster. With great skill and the utmost fortitude, he continued administering medical assistance until after the order had been given to abandon ship. When removed from the water by a rescue vessel he was completely exhausted but within a short time resumed his untiring efforts to revive survivors and care for the wounded for over thirty-six hours, at which time it became necessary to hospitalize him. He undoubtedly contributed to the saving of several lives. The extraordinary courage, selflessness and devotion to duty displayed by Lieutenant Neal were in keeping with the highest traditions of the Naval Service." Dr. Neal graduated from the University of Chicago School of Medicine in 1941 and entered the service in August 1943.

☆ ☆

BUY AN EXTRA BOND!

GEN. DWIGHT D. EISENHOWER PAYS TRIBUTE TO ARMY NURSES

A tribute to the work Army nurses are doing in the European theater was recently expressed by Gen. Dwight D. Eisenhower in a letter to Mr. Edwin B. Wilson, editor of the Brooklyn *Eagle*. General Eisenhower had been informed by Mr. Wilson of the campaign being undertaken by the Brooklyn *Eagle* and by the Brooklyn chapter of the Red Cross to recruit nurses for the armed forces. Expressing his appreciation of the nurses' work, General Eisenhower wrote "Nothing stops them in their determination to see that our troops receive the best attention humanly possible. . . . We need nurses, more nurses. The work that you and your group — and other similar groups throughout the United States — are doing must be successful."

☆ ☆

SIXTY-NINE ARMY NURSES HAVE DIED IN LINE OF DUTY

The War Department recently announced that of approximately 40,000 members of the Army Nurse Corps 69 have lost their lives in line of duty since Pearl Harbor, 24 have been reported as wounded and 66 are prisoners of war. Six officers of the Army Nurse Corps have died as a direct result of enemy action. Other deaths have been due to vehicle accidents, airplane crashes and disease.

☆ ☆

NURSES DECORATED FOR GALLANTRY UNDER FIRE

Twelve officers of the Army Nurse Corps have been awarded the Bronze Star for heroic service in Italy, the War Department recently announced. This brings to 17 the number of American nurses who have been decorated for gallantry under fire. One Bronze Star and four Silver Star awards were made earlier.

☆ ☆

CHIEF ARMY NURSE OF SIXTH CORPS AREA RETIRES

Lieut. Col. Pearl C. Fischer recently retired as chief of army nurses for the Sixth Service Command and was honored at a dinner at the Gardiner General Hospital, Chicago, August 8. Colonel Fischer was the first woman with that rank to serve with the Sixth Service Command. She will be succeeded by Lieut. Col. Martha Jane Clement, director of army nurses in the Southwest Pacific Area.

☆ ☆

CHICAGO NURSE RECEIVES AIR MEDAL

Lieut. Helen F. Lyon of Chicago, a member of the first overseas flight nurse team, who went to the Aleutian theater last year to evacuate men wounded in the Attu campaign, has recently been awarded the Air Medal. With Lieutenant Lyon's unit when it arrived in the Aleutians was 2d Lieut. Ruth M. Gardiner, who was the first air evacuation nurse to lose her life in this war and after whom the Gardiner General Hospital was named.

U. S. HOSPITALS ASSURED ENOUGH SUPPLIES AND EQUIPMENT FOR TREATMENT OF POLIOMYELITIS

The War Production Board's Office of Civilian Requirements recently announced that hospitals of the United States have been assured enough supplies and equipment to treat every one of the approximately 9,500 cases of poliomyelitis reported in the current epidemic and two and one-half times that number if they should develop. Warned in June by the rapid development of the epidemic in North Carolina and Kentucky and the occurrence of 480 cases nationally, the OCR Chemicals, Drugs and Health Supplies Division officials contacted the National Institute of Health and the National Foundation for Infantile Paralysis to determine what equipment would be needed and what was available. It was revealed that 150,000 yards of wool, 500,000 yards of muslin binder, 150,000 yards of oil silk, 100,000 blankets and 25,000 dozen safety pins would be needed, together with hot pack units. Three days later the first hot pack unit thus made available was shipped by the maker to a hospital in Washington D. C. Three more were sent to North Carolina, 15 went to Buffalo, and other orders were being filed.

Throughout the summer OCR acted as a clearing house, putting hospitals in touch with sources of equipment and supplies and manufacturers in touch with materials. Contacts were made for inquiring parties and emergency ratings issued when necessary. OCR officials believed there would be little difficulty in meeting future emergency demands. Cooler weather is expected to help stop the spread of the disease.

☆ ☆

TWO THIRDS OF ARMY WOUNDED RETURNED TO DUTY

According to a recent release, fully 96 per cent of all men wounded on battlefields recover, and of these about two thirds return to duty. When the convalescent period is reached the Army's new intensive program of reconditioning begins. This includes planned, progressive physical exercise to speed the recovery of strength and stamina. Occupational therapy encourages normal habits, and educational therapy mental advancement. Following the reconditioning program the men who have recovered but who do not meet the Army's physical standards for general service may remain in the Army in limited service status or in some cases may return to civilian life. Twenty-three per cent of those discharged from hospitals with serious physical limitations, and who were given the option of discharge from the Army, elected to remain in the military service, according to War Department figures for the period from June 25 to July 25. Continued hospital care as required will be available to casualties returned to civilian life, together with opportunity for vocational rehabilitation or academic advancement through study in schools and colleges, depending on circumstances and personal choice.

MEDICAL COMPANY COMMENDED FOR MERITORIOUS SERVICE

Company C, Third Medical Battalion, attached to the Third Marine Division, Reinforced, in the capture of a beachhead on Bougainville Island, has been commended by Major Gen. Roy S. Geiger, U. S. Marine Corps, commanding general of the First Marine Amphibious Corps. The citation reads "During the military operations commencing Nov. 1, 1943, which resulted in the capture by the Third Marine Division, Reinforced, of a beachhead on Bougainville Island, British Solomon Islands, Company C, Third Medical Battalion, made conspicuous and valuable contributions to the success of our arms. At the battles of Cape Torokina, Koromokina Lagoon, the Coconut Grove, Piva, Piva Forks and Fry's Nose, as well as during enemy bombing attacks and combat operations of a minor nature, the personnel of the company brought aid to the wounded under the most adverse conditions of weather and jungle terrain, cheerfully enduring enemy fire throughout each of these actions and frequently risking their own lives in order to evacuate and administer medical assistance to the injured during the heat of combat. The officers and men of the company acquitted themselves gallantly, winning the admiration of the combat troops and saving the lives of hundreds of the wounded."

The commanding officer of the company was Lieut. Comdr. Rodney Robert Gleysteen. Dr. Glysteen graduated from the State University of Iowa College of Medicine, Iowa City, in 1938 and entered the service Aug. 15, 1941.

Among other Medical Corps Officers with this company was Lieut. Leo John Koscinski, Chicago, who graduated from Northwestern University School of Medicine, Chicago, in 1941 and entered the service April 13, 1942.

☆ ☆

WHOLE BLOOD SHIPPED TO FRANCE

The first shipment of whole blood from the United States to soldiers wounded in France was made by the U. S. Army Medical Department by an army plane, August 21. Daily shipments have been made since, 250 pints a day the first week and 500 pints a day the second week; 750 pints a day will be shipped soon. Type O blood is being collected by the Red Cross for the shipments in response to appeals from Major Gen. Norman T. Kirk, Surgeon General of the Army, and Rear Admiral Ross T. McIntyre, Surgeon General of the Navy. The whole blood is prepared for shipment on the day it is drawn, and twenty-one hours after it leaves the United States it is available for transfusion in France. Brig. Gen. F. W. Rankin and Col. B. N. Carter of the Surgical Consultant Division with Lieut. Col. Douglas B. Kendrick, consultant to the Surgeon General on transfusions and plasma, developed the program for the Army Medical Department, and new developments in the preservation and refrigeration of whole blood were worked out to make the plan effective.

Original Articles

TRANSURETHRAL DRAINAGE OF THE SEMINAL VESICLES IN SEMINAL VESICULITIS

ROBERT H. HERBST, M.D.
AND
JAMES W. MERRICKS, M.D.
CHICAGO

Three years ago we reported before this Society our experiences, both clinical and experimental, dealing with the diagnosis and treatment of seminal vesiculitis. Our principal points at that time emphasized the association of obstructions in the distal portion of the seminal tract, namely the ejaculatory ducts, with persistent infection of the prostate, seminal vesicle and epididymis.

In this paper we will consider involvement of the seminal vesicles in association with the following four conditions:

1. Obstructive vesiculitis
2. Prostatic calculi
3. Hemospermia
4. Obstructive sterility.

Our clinical experience now consists of the transurethral dilatation and catheterization of approximately seven hundred and thirty ejaculatory ducts. Discussion of these cases can best be done by following the outline above.

1. *Obstructive vesiculitis* results from the obstruction of ejaculatory ducts chiefly by stricture, which is the aftermath of inflammation. More than half of these are caused by gonorrhea. A few ducts are distorted in their terminal portions by congenital deformities, making it most difficult to catheterize them.

From Rush Medical College of University of Illinois and Presbyterian Hospital, Chicago
Read before the Annual Meeting of Illinois State Medical Society, May 1943

This group contains the largest number of cases. Prostatitis is frequently associated with vesiculitis. On the average, these patients had been treated by prostatic massage, urethral sounds, irrigations and other procedures for more than three years. Some of them have been followed for seven to eight years.

These patients complained chiefly of pains about the genitals and perineum and repeated attacks of epididymitis which were persistently more frequent on the side more severely involved. Backache, joint pains, malaise with chills and fever were worse when tension of infected vesicular contents reached its height. Pain on ejaculation with hemospermia was noted not infrequently.

The mechanism by which repeated attacks of epididymitis occur is interesting to note. Massage of an obstructed seminal vesicle full of infected material, the so-called "male pus tube" of Belfield, merely churns up the contents, often forcing the infection back up the vas deferens, producing epididymitis. Straining with heavy lifting compresses the vesicles between the abdominal contents above and the fixed pelvic floor below, forcing the infected material back up the vas to the epididymis. Many times the patient is correct when he states his scrotal swelling followed a "strain".

The relief of obstructive vesiculitis is best obtained by transurethral dilatation of the obstructed ejaculatory ducts. By this means the fundamental surgical principle of drainage is obtained. Adequate drainage must be maintained by repeated dilatations depending upon the condition of the patient. Vasotomy offers nothing in the way of removing these obstructions. Fuller of New York at the turn of the

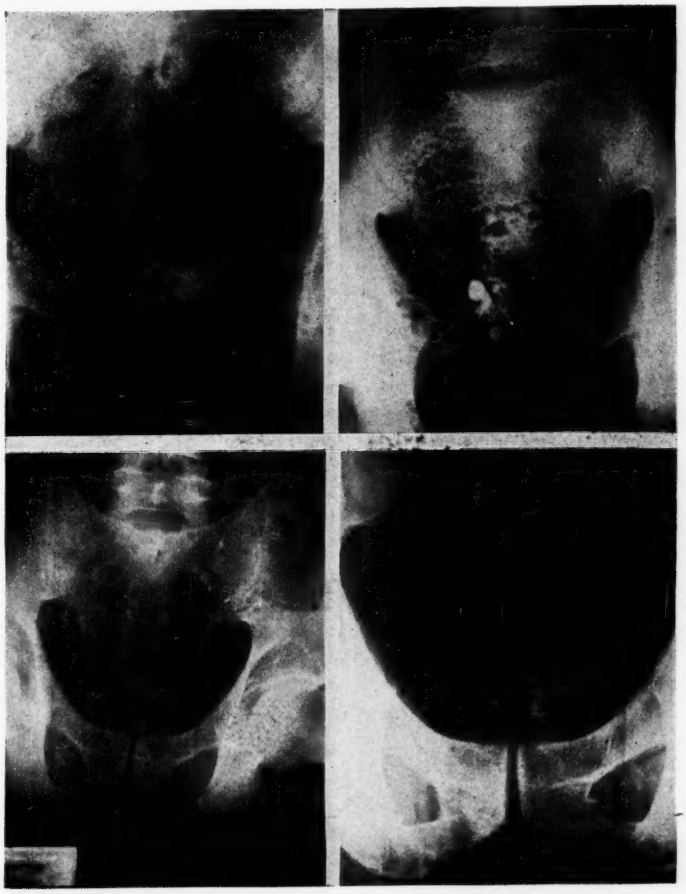


Figure 1. Case 1. (Top left). Abscess proximal portion left vesicle. Figure 2. Case 1. (Top right). Abscess of right vesicle. Figure 3. Case 1 (Lower left). Vesiculogram two years later, practically normal. Figure 4. Case 1. (Lower right). Vesiculograms four years later, slight dilatation tip of right vesicle.

century and Squier somewhat later treated these infected organs by perineal section, relying upon temporary open drainage of the incised vesicle to produce a cure.

Evidence that better methods were long ago sought is found in attempts, especially by Young of Baltimore, to devise instruments to penetrate the ejaculatory ducts endoscopically. The Wappler instrument, developed by McCarthy, has proven to be most satisfactory to us. This tiny machine with terminal wheels directs bougies or open end catheters of F3 or 4 calibre downward, medially and backward in the usual direction of the distal portion of the ejaculatory duct, which flares out in a lateral direction in the terminal one and a half or two mm. of its course.

Vesiculograms are routinely done because they are as indispensible as are pyelograms in the study of renal disease. Visualization of the vesicles is accomplished by the retrograde injection of full strength diodrast through the inlying catheter, one side at a time.

Caudal anesthesia, using 25-30 cc. of freshly prepared 1% novocaine is preferred for two reasons. Adequate relaxation must be obtained to permit freedom of manipulation about the veru montanum, where the ejaculatory ducts terminate. Normally the duct openings on the veru are apparently in a state of tonic contracture produced by the action of Bell's muscles

Figure 5. Case 2. Huge vesicles, result of obstruction. Bilateral vasectomy elsewhere.

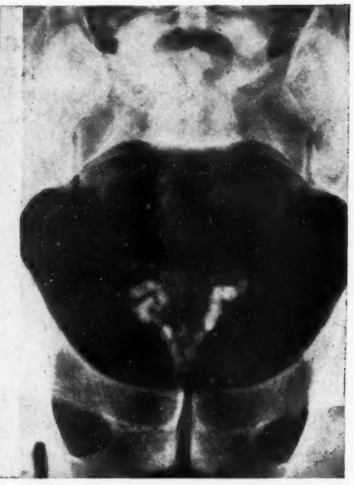


Figure 6. Case 2. Nearly normal vesicles eight months later.

Figure 7. Case 3. Normal left vesicle.

Figure 8. Cast 3. Suppurative vesiculitis, right; 15 attacks right epididymitis. No epididymitis since dilatation of right duct.

which swing down from each ureter, meeting below the veru, thereby exerting enough pull to keep the ejaculatory duct orifices closed except during ejaculation. We believe less toxic reaction results with caudal than spinal. General anesthesia must be very deep for this purpose, hence is not accepted ordinarily.

Failures were less than one percent and usually resulted from extreme distortion of the posterior urethra, either acquired or congenital. Dilatation is often started by using French 1 or 2 bougies. Only one or two dilatations were needed in some, many in others. At times the stenosing action of the infection extended into the seminal vesicle, resulting in partial obliteration of the tubules themselves, producing, in effect, an "auto-vesiculectomy".

The following cases illustrate severe obstructive vesiculitis from stricture of the ejaculatory ducts, followed by us for a minimum of four years.

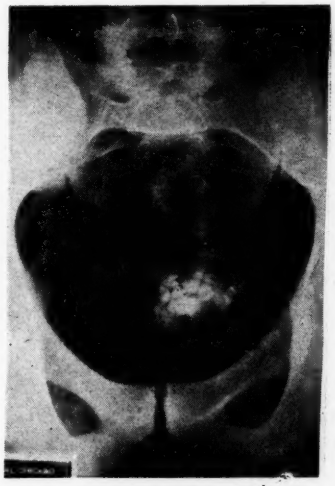


Figure 9. Case 4. Suppurative vesiculitis. Responded well to drainage.

Case 1. J. G., age 42. Gonorrhea years before, repeated bilateral epidiymitis with 7 years treatment elsewhere. Bilateral abscesses of vesicles present. Excellent result in nine months, well four years later. Figures 1, 2, 3, 4.

Case 2. H. K., age 44. Bilateral partial vasectomy elsewhere several years previously for recurrent epididymitis and "painful testicles" with perineal pain, which was relieved by dilatation of ejaculatory ducts. Figures 5 and 6, 2 years later.

Case 3. J. L., age 39. Massaged elsewhere for three years. Fifteen attacks of epididymitis on *right side.* No attacks of epididymitis since dilatation and drainage of right duct, in past five years. Figures 7 and 8.

Case 4. C. F., age 24. Gonorrhea several years previously. Perineal pain on ejaculation, hemospermia and persistent discharge, from large infected vesicles. No recurrence of symptoms in three years. Figures 9 and 10.

Case 5. M. V., age 54. Repeated perirectal abscesses, hemospermia. No recurrences of abscesses or hemospermia after dilatation of ducts and drainage of huge infected vesicles in four years. Figures 11 and 12.

2. *Prostatic calculi* have been found in approximately one-half of the prostate glands removed at routine post-mortem examinations in the Presbyterian Hospital and rendered transparent by us. These specimens were cleared by our modified Spalteholz technique. Undoubtedly these stones are associated with faulty drainage of prostatic ducts and possibly with altered tissue metabolism. Some stones are tiny and wide spread in the gland, others are large and collected in nests. Nearly all are phosphatic in nature, some are oxalate.

So-called chronic prostatitis is often associated with these stones, which are rarely found in the vesicles. Groups of these stones located near the ejaculatory ducts may cause extreme distortion of the ducts by pressure, contributing further to infection in these organs from faulty drainage.

Simple dilatation of the ejaculatory ducts may provide adequate drainage of the infected

Figure 10. Case 5. Huge infected vesicles. Ischiorectal abscesses. Hemospermia.

Figure 11. Case 5. Right vesicle better filled, several weeks later. No further rectal abscesses.

Figure 12. Case 6. Huge infected vesicles. Backache. No prostatic secretion. Prostatic calculi.

Figure 13. Case 6. Left vesicle much smaller 6 months later.

Figure 14. Case 7. Prostatic stones, causing pressure on ejaculatory ducts.

Figure 15. Case 8. Huge blood-filled vesicle, hemospermia. Recovery with instillation of 2% silver nitrate solution in vesicles.

vesicles, but at times transurethral prostatotomy with removal of the stones may be required to relieve the pressure on the ducts. The following two instances illustrate the two procedures.

Case 6. C. F., age 51. Severe low backache and perineal discomfort for several years. Massaged nine months in our office, never obtaining much secretion. Following dilatation of ducts, not removal of stones, has been well four years. Figures 13 and 14.

Case 7. S. M., age 67. Slow stream, perineal discomfort, pain in groins for several years. Transurethral prostatotomy with removal of stones brought relief of symptoms. Figure 15.

3. *Hemospermia* may be associated with tuberculous and malignant lesions at the bladder neck as well as with polyps, calculi and benign prostatic hyperplasia. Hemospermia may occur with no demonstrable cause. A huge vesicle filled with blood may respond well to empirical

Figure 16. Case 9. Large suppurative right vesicle. Left obstructed. Hemospermia.

Figure 17. Case 9. Eleven months later. Partial filling of obliterated, distorted left vesicle, right vesicle somewhat smaller.

treatment with nitrate of silver instillations into the vesicles as in the following:

Case 8. R. S., age 29. Following severe sexual irritation, recurrent large amounts of dark ejaculate, completely relieved four years now by several instillations of silver nitrate into vesicles. Figure 16.

Hemospermia may also occur with obstructive vesiculitis as a primary or minor symptom. See cases 4 and 5.

Case 9. G. P., age 54. Treatment elsewhere ten years for prostatitis and hemospermia. Severe vesiculitis responded to dilatation of ejaculatory ducts. Hemospermia relieved. Figures 17 and 18.

4. *Obstructive sterility* results more frequently from obstruction in the terminal portion of the seminal system than the proximal, near the epididymis. In the days when one of us (R. H. H.) probed many vasa deferentia as part of vasotomy, very rarely was stricture of the upper vas encountered. One should not neglect investigation of the ejaculatory ducts if evidence of bladder neck pathology is suspected.

Case 10. A. L., age 26. Pain on ejaculation, hemospermia, stones in prostate, sterility. Stones removed by transurethral prostatotomy. Ejaculatory ducts, which were extremely distorted and difficult to catheterize, straightened out. Wife conceived six months later. Figure 19.

Figure 18. Case 10. Stones in prostate; infected, distorted ducts and vesicles. Relieved after stones removed, impregnated wife 6 months later.

CONCLUSIONS

When routine adequate treatment by massage and instillations, with removal of distant foci of infection, fail to relieve infections involving the prostate and seminal vesicles, often satisfactory results may be obtained by providing adequate drainage of obstructed infected seminal vesicles. Transurethral dilatation of the ejaculatory ducts alone, or at times combined with transurethral prostatotomy for removal of prostatic calculi are the methods of choice. By these procedures the fundamental surgical principle of drainage of these organs is best obtained.

104 S. Michigan Ave., Chicago 3, Ill.

THE BEDSIDE DIAGNOSIS OF PARENCHYMATOUS LIVER DISEASE

CECIL JAMES WATSON, M. D.
MINNEAPOLIS

I shall stress for you as briefly as I can what I consider to be the most important features in the bedside diagnosis of parenchymatous jaudice.

What do we mean by this term? We mean a jaundice due to diffuse liver injury. In recent years relatively too much emphasis has been placed on the laboratory diagnosis of jaundice. It is probable that more than 50 per cent of all cases of jaundice can be diagnosed on the basis of a careful history and a careful physical examination. Laboratory tests are essential in something less than 50 per cent of the cases, admitting that there are some instances that defy all methods of diagnosis.

I cannot take the time to discuss all of the many facets of the diagnosis of jaundice. First, a word about pain. We are all aware that a history of biliary colic is very important in the diagnosis of calculous jaundice. It should be noted, however, that colic may occur with hepatitis or with cirrhosis. We have seen examples of this sort of "pseudo-gallstone" colic in which the pain was entirely similar to that of common duct stone. The colic in these instances is difficult to explain; it may be due to hyperirritability of the sphincter of Oddi.

Chills are very important in the differential diagnosis of jaundice. When chills are intermittent and recurrent they nearly always indicate a common duct calculus, less often a stricture. In catarrhal jaundice (hepatitis) chills may occur early in the course of the disease, often before the onset of jaundice.

The history of a previous attack of pain and jaundice is always important and always suggests the presence of common duct stones. One should keep in mind, however, that the association of cancer of the biliary tract, more particularly of the ducts and gallbladder, is frequently associated with gallstones. The fact that the patient has had previous episodes of colic does not prove that the present jaundice is on the basis of stones. It may be due to cancer of the gallbladder or common bile duct in a patient with cholelithiasis.

I should like to speak briefly about pruritis. This has often been said to be a sign of extrahepatic biliary obstruction and that one can interpret it accurately in differential diagnosis. I have not found this to be true. We see pruritis often enough in cases of hepatitis to make it a sign of little practical value. If the patient has intense persistent jaundice, however, and at the same time has no pruritis, hepatitis or cirrhosis is more likely to the underlying disease.

The history of ingestion of drugs is of great importance, especially cinchophen and arsenic. One must take this into account in every patient with jaundice. I have in mind a patient who had been receiving antiluetic arsphenamine for nearly two years, without apparent difficulty. The patient had not made her husband aware of this. Subsequently when she complained of mild pain and stiffness in her fingers, he sent her to his own, another physician, who prescribed sufanilamide. After a few days, the patient became jaundiced and later comatose. Death resulted from subacute atrophy of the liver. This was as perfect an example as I have ever seen of the combined effect of two drugs, both of which may damage the liver. It might be argued that the sulfanilamide alone was responsible, but there can be no doubt that damage from sulfanilamide is much more likely to result if the liver has already been injured by other toxins or poisons. In any case of jaundice with associated arthritis, one must always ask about the ingestion of drugs, especially cinchophen, since this substance at times causes severe jaundice which may terminate fatally or go on to development of cirrhosis and ascites.

As to physical examination, emaciation is important because it usually indicates a neoplasm. With cirrhosis of the liver, however, there may also be a marked emaciation. This is often noted particularly in the upper extremities.

The size of the liver is of considerable importance in the bedside diagnosis of jaundice. If the liver is large and smooth one can say very little about it from a diagnostic standpoint, because biliary engorgement may be due either to a gall stone or a cancer. The liver is often enlarged in cases of hepatitis. If, in the

---

Presented before the 102nd annual meeting of the Illinois State Medical Society, Springfield, May 20, 1942.

From the Division of Internal Medicine, University of Minnesota Hospital, Minneapolis, Minnesota.

presence of jaundice, the liver cannot be palpated and if liver dulness is absent on percussion, it is likely that the liver is small and this suggests either subacute atrophy or cirrhosis of the liver. In some instances of rapid liver atrophy, the liver may be noted to decrease in size from day to day. Obvious nodules palpated on the liver nearly always indicate cancer.

I should like now to emphasize the palpable, smooth, non-tender gall bladder in the jaundiced patient. The chances are great that there is a cancer of the extrahepatic biliary tract, most often in the head of the pancreas. This is a sign of extreme importance. We have not encountered it in other conditions, with but one exception, i. e., chronic fibrous pancreatitis.

The presence of an enlarged spleen usually indicates a parenchymatous jaundice, either hepatitis or cirrhosis. One must also think of familial hemolytic jaundice, with associated gall stones and common duct obstruction. Calculous jaundice alone may rarely be associated with splenic enlargement if the obstruction is sufficiently long standing to result in a biliary or obstructive cirrhosis. Such patients may even exhibit ascites or hematemesis due to esophageal varices. An enlarged spleen in most instances, however, can be interpreted in terms of hepatitis or primary cirrhosis.

I should like to stress particularly the "foetor hepaticus." This is a physical finding that has not been generally appreciated. This odor also known as the "amine odor" is noted especially in patients with acute yellow atrophy. It is a musty, slightly sweetish, very pervading odor which may be intense and fill the room or ward, or it may be noticed only when one is close to the patient. The "foetor hepaticus" may be regarded as a sign of hepatic insufficiency, more particularly of hepatic coma. We first regarded it as a fatal prognostic sign, but it may be noted in milder degree in patients with hepatitis or other liver damage from which there is ultimate recovery. We have noticed it in patients with jaundice due to sufanilamide, and in jaundice of other cause which lasted for a few days to a few weeks. We have noticed it in cases of cirrhosis of the liver with or without coma.

Ascites may mean cirrhosis, but it may also mean carcinomatosis. Apart from the laboratory studies of the ascitic fluid, the most valuable aid, of course, is the presence of collateral circulation over the abdomen.

Pigmentation of the skin is often suggestive in the diagnosis of cirrhosis, especially pigmentation in the creases of the palms of the hands, the axillae, the axillary folds, and over the back. The pigment is melanin.

In general, patients with cirrhosis have relatively little hair. It is unusual to observe cirrhosis in patients who are quite hirsute, but as illustrated below, this may occur rarely.

Biliverdin (green) jaundice is much more often seen in patients with cancer. Exceptions are noted in occasional cases of long standing hepatitis.

Spider nevi are most often observed in patients with cirrhosis of the liver. While not pathognomonic, they should always strongly suggest this disease. They may appear at a distance simply as tiny red papules. As one looks more closely, a light red center is seen with little vessels running out in various directions. It is of interest that these spider nevi (arterial) occur only in areas of the body drained by the superior vena cava. I have never seen them in the lower portion of the body. They may appear while the patient is under observation in the hospital. One may see them come out on the chest, back of the neck, shoulders or hands, and when they do, that patient is likely to have diffuse damage of the liver, most often cirrhosis.

In discussing bedside diagnosis, most laboratory methods are obviously excluded from consideration. The urine urobilinogen test* however, is easily carried out at the bedside and may yield decisive information. If it is positive, the jaundice is hardly ever due to cancer of the biliary tract. If it is strongly positive, parenchymatous jaundice is more than likely, although the possibility of liver damage secondary to extrahepatic biliary obstruction must be considered, as for example, a common duct stone with cholangitis. Also, of course, the urine urobilinogen test may be intense during the crises of hemolytic jaundice.

---

*5 cc. of freshly voided urine cooled to room temperature.
5 cc. of modified Ehrlich's reagent:
0.7 gm. pure p-dimethylaminobenzaldehyde
150 cc. concentrated (37%) HCl.
100 cc. distilled H_2O
10 cc. saturated aqueous solution of sodium acetate.

Illustrative cases with the more important bedside diagnostic features italicized, are given below:

1. ♂, 69. Increasing jaundice for 3 weeks. Lower abdominal pain and some diarrhea at the outset. Dark urine and light stools. Admitting diagnosis: Cancer of the head of the pancreas. *No pruritis. Enlarged liver. Gall bladder not palpable. Spleen palpable.* Outspoken *foetor hepaticus.* Marked *urobilinogenuria.* Diagnosis: Hepatitis. With a high protein diet, plenty of glucose, and complete bed rest, this patient recovered completely.
2. ♂, 55. 10-8-41. Moderate *alcoholism* many years. *Deficient diet* (500 calories) for weight reducing purposes, 4 months. Continued alcohol. Jaundice appeared August 1, present 10 days, *disappeared.* Reappeared August 20, persisted. Anorexia. Deep jaundice. Marked pruritis. Marked hirsutism of arms and chest. *Liver not palpable — decreased dulness.*

Mild *confusion* and *euphoria* with tendency to *somnolence.* No foetor.

10-13-41. Definite *ascites.* Outspoken *foetor hepaticus.*

10-15-41. Extreme foetor. Onset of *coma.*

10-17-41. Coma has deepened; foetor not so marked. Exitus. Necropsy: 900 gm. liver, diffuse portal cirrhosis.

PHARYNGO-ESOPHAGEAL DIVERTICULA

MAX M. KULVIN, Major M.C.
CHICAGO
Chief, Eye, Ear, Nose, and Throat Dept.,
U. S. Veterans Administration,
Hines, Illinois

According to the texts, the esophagus is a nearly straight membranous, muscular tube, but there are many exceptions, particularly because of pathological changes in the neck and chest that tend to distort the passage of the esophagus. We are not concerned with the defects of the esophagus that occur below the cervical region, but with the definite development of the diverticulum at the junction of the pharnyx and esophagus, and its treatment.

Relation and Structure:— The pharynx extends from the base of the skull to the 6th cervical vertebra, where at the lower border of the cricoid cartilage, it becomes the esophagus. At this same level, the larynx is continuous with the trachea. The posterior wall of the trachea is applied throughout its entire length to the anterior wall of the esophagus, but between the two, there is enough areolar tissue to allow each to dilate and contract independently.

The cervical part of the esophagus is separated from the vertebral column by the Longus Cervicis muscles and prevertebral fascia. Lying over the trachea is the thyroid gland, which passes laterally and backward. The recurrent laryngeal nerve ascends in the angle between the trachea and esophagus and behind the thyroid gland, and the large vessels lie lateral to the esophagus.

Barnhill states that the structures of the neck are enclosed in 3 separate compartments, each enclosed by a deep layer of cervical fascia, all divisions lying against each other, yet completely separated from and adjoined to each other by loose connective tissue. In one compartment, the carotid sheath, are the large blood vessels and vagus nerves; the muscles, individually or in groups fill the muscular compartments, while still another contains the trachea, thyroid gland, and esophagus. This latter group, he calls the cervical viscera. There is no visible connection between the structures of any one group with any of the others. The loose connective tissue which separates the various fascial bundles creates a channel that reaches from the surface deeply into the neck, and establishes a natural safe and easy pathway along which a majority of all surgical affections of the neck may be reached.

The esophagus has an outer muscular coat of two layers, and an inner glandular coat covered with permanent epithelium. A connective tissue layer joins the two. In place of true serosa, the outer covering of the esophagus consists also of connective tissue, which is continuous with the surrounding structures. The outer layer of the muscular part consists of longitudinal fibers, and the inner layer of circular fibers. The longitudinal fibers are attached to the back of the cricoid cartilage. The inner layer of circular muscular fibers is a continuation downward of the inferior constrictor muscle. The upper end of the esophagus is the lower end of the pharynx, so that the voluntary muscular fibers predominate. The longitudinal fibers which form the external of the two muscular layers of the esophageal wall split posteriorly, turn right and

---

From the Department of Otolaryngology of the U. S. Veterans Facility, Hines, Illinois.

Presented before the Section on Eye, Ear, Nose and Throat, 103rd Annual Meeting, Illinois State Medical Society, May 18, 1943.

left, and mark off a V-shaped space at the beginning of the esophagus. After separating, the two bundles of fibers sweep forward and upward around the esophagus laterally to gain an attachment anteriorly to the vertical ridge in the center of the seal of the cricoid cartilage. This leaves the circular fibers of the upper posterior part of the esophageal wall unsupported by longitudinal fibers. The V-shaped gap is about an inch long and directly behind the cricoid cartilage. This is the weak triangle of the pharyngo-esophageal wall, and it is through this spot that diverticula of the pharyngo-esophagus may herniate.

Figure 1. Diagrammatic illustration of posterior aspect of the junction of the pharynx and the esophagus. The two points marked x represent the two levels at which pulsion diverticula herniate through — the upper x is in the lowest fibers of the inferior constrictor muscle, the lower x is at the pharyngeal dimple, the defect in the posterior wall where the cricopharyngei muscles diverge from the lowest fibers of the inferior constrictor muscle.

Classification: Ludlow first described an esophageal diverticulum in 1769, Bell in 1816, Rokitansky in 1840, and Zenker and Ziemssen in 1873 made further advances in the study of these pouches. The pharyngo-esophageal diverticulum is called a Zenker diverticulum in many texts.

Moynihan states there is no such thing as a pharyngo-esophageal diverticulum, but these should be called pharyngeal diverticula or esophageal diverticula. He also states that Zenker's name should not be attached to these cases inasmuch as Ludlow first described them, and his specimen is preserved in the Hunterian Museum in Glasgow.

Raven classified these pouches as pharyngeal and esophageal.

A. Pouches of pharynx.

B. Pouches of esophagus, upper and lower. (These will not be under discussion in this paper.

A. Pharynx-

I. Congenital. II. Acquired.

I. Congenital.

Lateral pouches are derived from third and fourth embryonic endodermal pouches. The third endodermal pouch opens at the bottom of the pyriform sinus.

Those derived from the fourth pouch are uncommon.

II. Acquired.

A. Anterior pulsion.

B. Posterior pulsion.

A. Anterior Pulsion type was found by Hurst lying posterior to the larynx and in front of the esophagus.

B. Posterior Pulsion Diverticulum is a prolapse of mucous membrane of the pharynx in an area bounded by two different sets of musculature, comprising the cricopharyngeus muscle, and innervated by two different sets of nerves.

In the foetus, the Cricopharyngeus muscle divides into (1) an upper superficial constrictor in pharyngeal constrictor musculature and (2) a lower deep sphincteric part which blends posteriorly with muscle of esophagus.

The constrictor part passes obliquely upward around the esophagus, while the sphincteric part passes obliquely downward, leaving a weak area in posterior wall of pharynx between superficial and deep portions. In this spot, the pharyngeal mucosa may prolapse. These usually occur on the left side. The next common site is the Killian-Jamieson area on the postero-lateral wall of the pharynx, below the cricopharyngeus muscle and above the circular muscle fibers of the esophagus. The least frequent site is the lower portion of the inferior constrictor muscle.

It is stressed by most writers that only the mucous membrane of the pharynx herniates through this area, but Shallow reports a case by Whitehead in 1891 in which the pharyngeal pouch consisted of all three coats of pharynx.

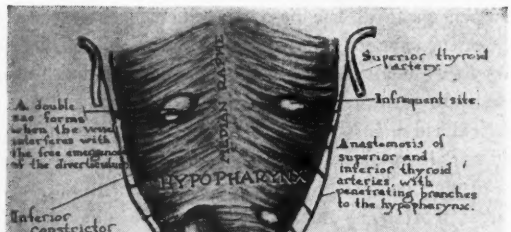

Superior thyroid artery
Infrequent site
A double sac forms when the vessel interferes with the free emergence of the diverticulum
Anastomosis of superior and inferior thyroid arteries, with penetrating branches to the hypopharynx.
HYPOPHARYNX
Inferior constrictor
Inferior thyroid artery
Inferior thyroid artery
Second most common site
Most common site. Sac begins on left and fills to midline, giving X-ray appearance of sac being a mid-line structure.
M. cricopharyngeus (Sling-muscle)
ESOPHAGUS

Figure 2. The pharynx, posterior view showing the various locations for the development of diverticula.

A similar case is reported by Shallow. Two conditions may set up this herniation.

(1) Loss of elasticity or degeneration of muscles composing the lower pharyngeal constrictors.

(2) Persistence of contraction of sphincteric portion of Cricopharyngeus muscle during deglutition.

During the second stage of deglutition, the pharyngeal constrictors contract while sphincteric portion of cricopharyngeus relaxes.

The nerve supply around the esophageal entrance is complex.

(a) Pharyngeal constrictors are supplied by the pharyngeal plexus.

(b) Upper end of esophagus is supplied by motor nerves from the recurrent laryngeal nerve.

Symptoms: I am presenting the composite symptoms that occurred in my five cases. Not all cases had all these symptoms as a whole, some patients stressed some things more than others.

(1) *Pain* in throat or below, with a "catching" sensation after swallowing.

(2) *Coughing* up of food particles previously eaten, as well as medication. For instance, one patient had been given some pills for pneumonia which he later coughed up, despite which or because of it he recovered from his pneumonia.

(3) Sensation of *belching* occurs during talking when pressure is made over one side of the neck or the other. Sometimes the sensation is one of gurgling.

(4) *Fullness* in neck after eating.

(5) *Difficult* to clear throat at times with feeling of something being stuck there. This may lead to erroneous impression of a *globus hystericus.*

(6) *Difficulty* of taking liquids at times.

(7) *Loss of weight* despite presence of good appetite.

These symptoms were found to be present anywhere from seven months in one case to nineteen years in another case before coming to operation. In the nineteen year case, it is significant that, although the patient complained of throat trouble on several occasions, in view of the fact nothing was found on laryngeal examination, he was labeled a mental case. It was only after an attack of pneumonia when an x-ray of chest and esophagus was made that the diverticulum was diagnosed. Other symptoms that may occur are:

(8) Hoarseness due to pressure on recurrent laryngeal nerve.

(9) *Ptosis or exophthalmos* due to pressure on cervical sympathetic plexus.

Diagnosis: A diagnosis is made by a combination of (1) symptoms as evaluated from a clinical history, and (2) x-ray and fluoroscopic findings. As a rule nothing is found on physical examination with the exception of an occasional

ballooning out of the lower part of the neck on swallowing. This is a rare finding. Esophagoscopy is advisable not for the purpose of establishing a diagnosis of diverticulum, but rather to disclose if a neoplasm or a stenosis is at the bottom of the trouble.

Differential Diagnosis: Here we must consider chiefly carcinoma of the hypopharynx and upper esophagus and stenosis of esophagus, hysteria, acute and chronic infections. Recently a patient was admitted to the hospital with a preliminary diagnosis of diverticulum. The x-ray revealed a large dilated sac, but there was not seen the fine stream of barium descending from the subdiverticular opening as is usually the case. On esophagoscopy a tumor was found in the pyriform sinus which on biopsy proved to be a carcinoma.

Another case revealed a stenosis of the esophagus just below the cricopharyngeus muscle due to a lye burn when a child. This displays quite a sac.

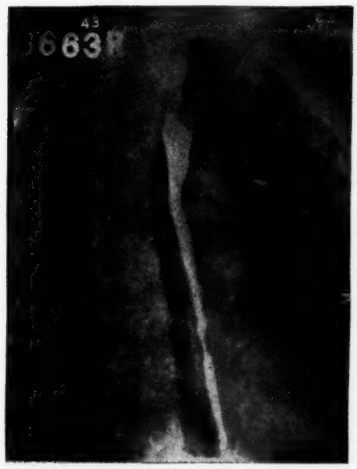


Figure 3. Stenosis of upper esophagus with dilation simulating diverticulum.

Treatment: The treatment of pharyngoesophageal diverticula is surgical. Conservative treatment however is reserved for very old patients, as well as for diverticula of the esophagus below the clavicle.

Dilatation of the subdiverticular is difficult and unwarranted, for in this spot lies the cricopharyngeus muscle which is the only boundary fence between the pouch and the mediastinum. Perforations may be easily obtained.

The operation of choice has fluctuated back and forth between the one stage and the two stage procedures. Men of great distinction can be quoted for either side.

Nichaus in 1884 is believed to be the first to remove the sac in one stage, but a hemorrhage proved fatal on the twenty-fourth day.

Von Bergman in 1892 reported the first successful extirpation, but a fistula persisted for six months.

Hearn in 1899 reported the first case in the United States.

Girard of Berne in 1896 invaginated the sac without opening into the esophagus. This method was adopted by Halstead, Bevan and others.

Goldman in 1906 did the first two stage operation.

C. H. Mayo in 1910 further advocated the two stage procedure and this technique was developed by Judd and Mayo, adopted by Lahey, Heyd, Pool, and others.

The chief danger of the one stage operation lay in infection of the mediastinum from incomplete closure of the neck of the excised sac.

The mortality rates following the one stage operation in its earliest usage compelled the introduction of the two stage precedure. The feeling ran high that this then was the proper procedure.

In 1930, Jackson and Babcock revived the one stage procedure by an air and water tight closure of the esophagus. They used the esophagoscope to locate the sac and act as a guide to the closure to prevent a too tight fitting suture line which might produce stenosis. All cases were operated under avertin narcosis.

Moynihan reported fifteen cases of one stage removal, all successful. Many other successful results have been reported.

The two stage procedures according to Judd and Harrington should be reserved for those cases in which (1) the diverticulum is large. (2) Considerabble inflammatory reaction is found at operation on exposing sac. (3) The sac extends into the mediastinum.

Some of the distinct advantages of the one stage procedure as pointed out by Phillips and Israel are:

(1) The shortened hospital time. Patient is subjected only to one operative procedure.

(2) Recurrence and fistulae formations are rare.

(3) Less danger of injuring the recurrent laryngeal nerve.

(4) Secondary bouginage seldom necessary due to minimal distortion of pharynx.

(5) Choking spells from air trapped in distorted anchored sac in two stages are eliminated.

The cases reported here are all carried out by the one stage technic, with the exception of one, which was done in two stages, the reason for this being the fact that when the sac was freed, it was found to have such a wide neck that we felt it would be more prudent to accomplish it in two steps.

The operations were performed under local infiltration of skin and subcutaneous tissues, and deep cervical block of second and third cervical nerves. No esophagoscope was needed to locate the diverticulae. A Levine tube was passed into the throat sometimes before, and sometimes after exposure of the sac. Sulfathiazole powder was used in the depth of the neck wound in most of the cases.

The post-operative treatment was carried out according to the Babcock-Jackson procedure. In only one case was there any complication, and that was in the two stage procedure, when a low grade infection developed in the wound after the first stage had been completed, delaying the second stage several months.

CASE REPORTS*

Case 1. N. C. White male, age fifty, entered the hospital December 4, 1940, complaining of difficulty in swallowing.

History: Pneumonia three times. Bilateral herniorrhaphy with a stormy convalescence. Recurrence of hernia after considerable coughing.

Present Illness: In 1922, he had occasional difficulty in swallowing, stating something was obstructing his food passage. Later he noted some gurgling in throat while swallowing. This continued until 1937 when he noted a gradual onset of pain in his throat in the afternoon, but not in the morning on arising. He swallowed fairly well, but noted a "catch" after swallowing. *Coughed up* material contents. Entered a hospital in 1937, in a nervous state, and he was told his condition was mental. In December, 1939, when his throat became bad, he went to a hospital, was examined and again was told that his condition was mental. No x-rays were taken. In March, 1940, he had pneumonia, and was again told that his throat condition was all on a mental basis. In June, 1940, after second attack of pneumonia, x-rays of esophagus were taken. Whereupon a diverticulum was found.

Symptoms: *Pain* in throat or below in afternoon. *"Catching"* sensation after swallowing. *Coughing* brings up recently eaten food particles and stringy secretion. During his pneumonia attack coughed up pills that were given the previous day for pneumonia, and got well from the pneumonia. *Belching* sensation occurred when pressure was applied over lower right side of neck. *Balloon like swelling* over right side of neck on increasing pressure such as in Valsalva's test.

Physical Findings: A mild hypertension was present. Wasserman examination was negative. Blood count was negative. There was a slight recurrent bilateral inguinal hernia present.

Esophagoscopies: The first esophagoscopy made on December 18, 1940, disclosed a large pouch on the posterior wall of the esophagus at the level of the cricopharyngeal opening. The subdiverticular opening was anterior and somewhat to the left, but would not admit the esophagoscope. A further esophagoscopy resulted in same findings. Following operation, he was again esophagoscoped, which will be reported later.

X-ray Findings: (1) On December 10, 1940, the report showed smooth saccular dilatation in upper third of esophagus, measuring 3 x 5 cm. (2) On January 8, 1941, while swallowing a lead bead, the fluoroscope examination revealed the bead stopping at the level of sternoclavicular articulation. On swallowing a barium mixture, the lead pellet was seen to enter a pouch at this level, but after several attempts at swallowing, the bead was never seen to enter the subdiverticular opening. A diagnosis of Diverticulum of Esophagus was confirmed. A final x-ray was taken after surgical extirpation.

Operation: January 14, 1941. An incision was made along the anterior border of the sternocleidomastoid muscle on the right side from the thyroid cartilage to the jugulum. After exposing the sternocleidomastoid muscle and retracting it posteriorly, blunt dissection of the loose areolar connective tissue, exposed the thyroid gland to view, which it was necessary to divest of its surrounding loose tissue, elevate and retract medially. A swallowing movement immediately ballooned out the diverticulum lying behind the thyroid gland. The esophageal pouch was grasped, divested carefully of its fibrous covering down to the neck at its attachment to the posterior wall of the esophagus. The recurrent laryngeal nerve which lies in the groove between the thyroid gland

*These cases were operated with the assistance and advice of Dr. Paul Brown, chief of the Surgical Service, and the cooperation at times of Drs. Randall Moreland, Benjamin Ward and Irving Feldberg. Miss Robinson, medical Librarian, kindly assisted in the compilation of the literature.

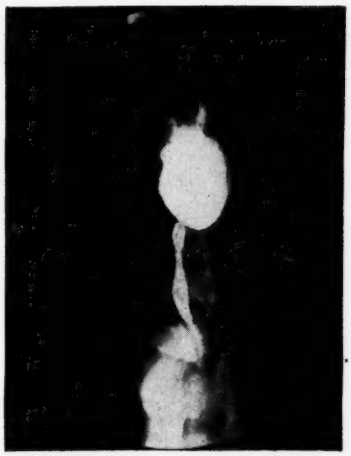


Figure 4. Diverticulum of esophagus prior to operation.

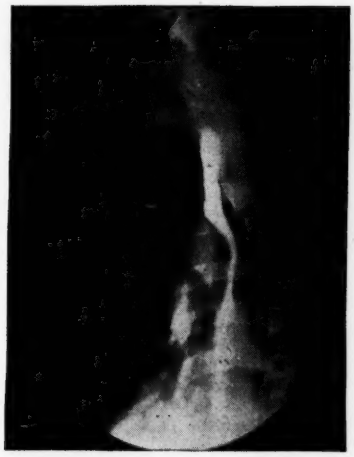


Figure 5. Esophagus after excision of diverticulum.

and the esophagus was isolated and packed off. The contents of the sac were emptied out by pressure. At this point, I might add that a report by Charles Mayo in 1910, warned against expressing the contents of the sac at this point because one of his patients aspirated the contents with almost disastrous results. However, his patient was operated during narcosis, which was the reason for the contents spilling over into the trachea. A Kelly clamp was placed over the neck of the pouch one-half inch from its junction with the esophagus, another applied distally, and the sac cut off between the clamps by the surgical diathermy knife, and the edge coagulated. An aseptic closure was accomplished, when a chromic, catgut suture was put through one edge of the stump to be used as a guy rope and the first row of sutures was placed through the mucosa and submucosa, first on one side of the clamp, and then over to the other side until the whole length of the stump was covered. By gradually making the suture taut as the clamp was being released the cut edge of the sac was closed by inversion of the edge. A second row of sutures was placed over this, closing the first line of sutures, and finally, a third row of silk was placed over this. In this manner we were sure to obtain a complete water tight closure of the esophagus. By placing the first suture about one-half inch from the neck of the sac, a constriction of the esophagus could be avoided. A Levine feeding tube was inserted prior to removal of the sac. A rubber drain was inserted into the lower end of the incision in the neck. The muscles were closed with catgut. A subcutaneous approximation was made, and the skin closed with interrupted silk sutures.

Post-Operative Care: Following Jackson and Babcock's method, the patient was given 120 cc. fluid every two hours thru the tube followed by sterile water. This was increased 30 cc. on second day until patient received 240 cc. every four hours. On seventh day several teaspoonsful of sterile water was given by mouth. On eighth day, the tube was removed and thin liquids given. After two weeks, he was allowed semi-solid soft food. After the sixth week, solid food was given. X-ray showed barium passing without hesitation. On February 6, 1941, an esophagoscopy revealed a slight thickening on the posterior wall of the esophagus where the stump was inverted. No further evidence of a diverticulum was present and the esophagus could be inspected for the first time. He was discharged February 7, 1941. Pathological diagnosis was Esophageal Diverticulum.

Case 2. A. T. White male, age fifty, entered the hospital September 16, 1941, complaining of difficulty in swallowing, regurgitation of food and occasional gurgling sensation.

Present Illness: For many years patient has felt that there was something in his throat that did not belong there. For the past two months he could not clear his throat, felt like something was sticking. Food regurgitated frequently. Hard uncooked foods were especially difficult to cough up as they seemed to become lodged. Found difficulty at times in taking liquids. Noticed discomfort and gurgling in left side of neck which was relieved by coughing. After coughing he would bring up small pieces of food which had been consumed several hours previously.

Laboratory Examination: Wasserman and Kahn were negative. Blood, sputum, and urine were normal.

X-ray Examination: On September 19, 1941, fluoroscopy and x-ray revealed a fairly large diverticulum protruding from the left side, and on posterior aspect of esophagus at the level of the 6th vertebra. Barium is retained in diverticulum and compresses esophageal wall to some extent.

Esophagoscopy: An esophagoscopy was done on September 30, 1941, and a large dilated sac was found about 16 cm. from the upper teeth, which contained a

moderate amount of fluid and food particles. The sac deviated towards the left. The subdiverticular opening was noted quite anteriorly and could be entered with flexible bougies but the esophagoscope could not be passed into the opening.

Operation: October 31, 1941. Local anesthesia and cervical block were used. A Levine feeding tube was passed into the diverticulum of the esophagus. An incision was made along the anterior border of the left sternocleidomastoid muscle from the thyroid cartilage to the clavicle. The diverticulum was located lying upon the prevertebral fascia and extending downward about 5 cm. After freeing sac from the surrounding tissues, the neck was exposed, measuring about 2 cms. in diameter. The contents were carefully squeezed out. The sac was cut off in the manner previously described and the stump closed as in the preceding cases. A small Peurose drain was inserted in the lower edge of the wound, which was closed with catgut and silk.

Post-operative care in addition to the Jackson feeding procedure included thirty grains sulfathiazole thru feeding tube following operation, and fifteen grains every four hours for the next four days.

A barium x-ray and fluoroscopy on November 22, 1941, revealed no evidence of diverticulum.

On December 8, 1941, a post operative esophagoscopy permitted the introduction of the esophagoscope for the first time with no evidence of any constriction.

Case 3. A. H. S.: White male, age fifty, was admitted to the hospital April 2, 1942, complaining of fullness in neck, and loss of weight.

Present Illness: Onset of sore throat occurred in September, 1941. Was treated for sinus trouble with no benefit. Noticed after eating, a fullness in neck, had no tendency to vomit, but could express the fullness with his hand, and expectorate the contents. Had lost fifteen pounds in past six months though appetite is as good as it ever was.

Laboratory Examination: Urine and blood examinations negative. Wasserman and Kahn negative.

X-ray Examinations and Fluoroscopy: On April 6, 1942, a small diverticulum of the esophagus was noted, extending from the posterior portion of the mouth of the esophagus, measuring approximately 4 cm. in diameter.

Esophagoscopy: At 15 cm. from the teeth, there is an opening into a sac which appears somewhat to the left. The subdiverticular opening of the esophagus could not be located with the esophagoscope, but careful insertion of flexible rubber tipped bougies revealed the opening to lean towards the right and anteriorly.

Operation: May 5, 1942. Under cervical block on the left side, in addition to novocaine infiltration, an incision was made as in the other cases, and the sac found just above the cricopharyngeus region, measuring 5 to 6 cm. in length. A feeding tube had previously been inserted through the nose into the sac. All the sac contents were expressed out and a clamp placed 1 cm. from the base of the sac, and the sac cut off. The edge was painted with tincture merthiolate and stump closed by three layers of sutures as in the previously mentioned cases. A rubber drain was placed in the lower end of the wound, sulfathiazole powder was insufflated into the cavity of the neck, the muscles and subcutaneous tissues approximated and the skin incision closed.

The post-operative care followed the same course as previously outlined. A final x-ray examination June 5, 1942, revealed a normal appearing esophagus. No post-operative esophagoscopy was done. The patient was discharged on June 13, 1942.

Case 4. H. W. K. White male, age fifty-four entered the hospital July 3, 1942, complaining of difficulty in swallowing and regurgitation of food.

Present Illness: First noticed difficulty in *swallowing* and *regurgitation* of food about three to four years ago, especially on lying down. This has become gradually worse, especially for the past six months.

Laboratory Examination: Wasserman and Kahn negative. Blood count showed a 3,800,000 red count otherwise negative. Urinalysis negative.

X-Ray Findings: On July 6, 1942, a large pulsion diverticulum was found approximately 7 cm. in diameter, extending directly posteriorly at the introitus of the esophagus.

Operation: July 21, 1942. After cervical block and local infiltration of the neck, the usual incision and exposure of the esophagus was accomplished, and the sac isolated. The sac measured about 5 to 6 centimeters in length, and 2-2½ centimeters in width. The sac was at the posterior surface of the esophagus at the cricopharyngeus region. The sac was severed at the neck between two Kelley clamps, the stump treated with phenol-alcohol, and closed in the usual manner as noted in the previous cases.

The usual post-operative feeding was carried out and the tube removed on the seventh day. A post-operative esophagoscopy on August 20, 1942, revealed a slight puckering of the mucosa of the esophagus, but the incision was well healed. At this site there was a slight constriction through which the esophagoscope could be passed with slight pressure. This patient would probably require several dilatations to maintain the proper lumen. He was discharged an August 21, 1942, four and one-half weeks after operation. I believe this was probably too soon to discharge a patient, who might have needed further observation but he ate everything and well, and was straining at the leash at his inactivity. Pathological diagnosis of specimen was Diverticulum, Infected.

Case 5. A. P. E. White male, age fifty-four, entered the hospital January 6, 1942, complaining of difficulty in swallowing.

Past History: Had the usual childhood diseases, was told about ten years ago that he had syphilis.

Present Illness: States he has had difficulty swallowing, for the past eight to nine years. The condition has neither improved nor progressed. Liquids and soft foods do not give trouble, only solid foods do. These stop in his throat and will not go down.

X-ray Findings: On January 9, 1942, a fluoroscope examination revealed a large diverticulum of the esophagus at the introitus, extending to the left and posteriorly.

Esophagoscopy: An esophagoscopy was done January 27, 1942, at which time 15 cm. from the upper gum margin there was noted a large dilated pocket. The sub-diverticular opening into the esophagus could not be visualized but bougies were passed through the esophagascope readily into the esophagus anteriorly and to the right.

Operation: March 27, 1942. Under left cervical block and local novocaine infiltration, the usual skin incision was made and the diverticulum dissected out, the base of the sac lying at the level of the cricoid cartilage. After isolating the sac, it was found to have a rather wide neck, and a two stage procedure was deemed advisable. The fundus of the sac was sutured with several interrupted silk sutures to the medial border of the sternocleidomastoid muscle, the suture cut, leaving about 1 inch so that it could readily be found on reopening the incision. A small amount of iodoform was sprinkled into the lower cavity of the neck. The muscles were closed with catgut. A rubber drain was placed in the wound and the skin closed.

A low grade infection occurred which prolonged the period of healing so that it was not considered safe to proceed to the second stage for approximately two months.

Second Stage: On May 29, 1942, the scar was excised and marked adhesions were found surrounding the diverticulum. The sac was found filled with food contents. After the contents were expressed, the sac was completely stripped of its fibrinous covering and we proceeded not as in Lahey's method for the second stage, but exactly as we had in all our first stage procedures. The neck of the sac was not as wide as found at the original operation. The neck was grasped between two clamps and severed between them. The stump was cauterized with pure phenol and neutralized by alcohol, and closed over by three layers of sutures, the first of chromic catgut and the last one of silk.

Sulfathiazole powder was dusted into the neck cavity and after placing a drain in the lower angle the wound was closed. A Levine feeding tube was inserted into the esophagus through the nose.

The usual post-operative routine was carried out. Fluoroscopy and x-ray taken on June 26, 1942 showed a completely clear esophagus. No post-operative esophagoscopy was done. The patient was discharged on July 10, 1942, six weeks following the operation. Pathological diagnosis of specimen was Diverticulum of Esophagus.

BIBLIOGRAPHY

1. Mayo, C. H., Annals Surgery, 51:1910.
2. Jackson, C. and Shallow, T. W., Annals Surgery, 83:1-19, January, 1926.
3. DeTakats, G., Local Anaesthesia, Saunders and Co. 1928.
4. Judd, E. S. and Moersch, H. J., S. Clin. North America. 9:793-800. August, 1929.
5. Mosher, H., Arch. Otolaryngology, Vol. 9, 1929. P: 547-548.
6. Jackson and Coates, Diseases of Nose, Throat, and Ear — W. B. Saunders Co., 1930. P: 1024-62.
7. Babcock, W. W. and Jackson, C., S. Clin. N. America, 10:1249-63. December, 1930.
8. Babcock, W. W. and Jackson, C., Surg. Gynec. and Obs. 53:667-669. 1931.
9. Judd, E. S. and Mayo, C. H., Wis. Med. Journal, 32: 221-225. April, 1933.
10. Barret, N. R., Lancet. 1:1009-1011. May 13, 1933.
11. Raven, R. W., Lancet. 1:1011-1015. May 13, 1933.
12. Raven, R. W., British Jour. Surg. 21:235. Oct., 1933.
13. Shallow, T. W., Surg. Gynec. and Obs. 62:621-633. March, 1936.
14. Moynihan, B., Quoted by Shallow in S. G. O. 62:624-633. March, 1936.
15. Eliason, E. L., Tucker, G., and Thigpen, F.M., Surgery. 2:188-195. Aug., 1937.
16. Grant, J. C. B., A Method of Anatomy — Wm. Wood & Co., 1937. P: 500-525.
17. Woodbridge, P. R., S. Clin. N. Amer. 19:583. 1939.
18. Lahey, F., Arch. Surg. 41:1118-1140. Nov. 1940.
19. Barnhill, J. F., Surgical Anatomy, Head and Neck — Williams & Wilkins Co., 1940.
20. Phillips, J. R. and Israel, S., Amer. Jour. Surg. 52:360. May, 1941.
21. Barnhill, J. F., Annals Otoloryngology. 50:850-859. Sept., 1941.
22. Mahle, A. E. and Christopher, F., Ill. Med. Jour. 82:124. Aug., 1942.
23. Torek, F., In Nelson Loose Leaf Surg. Vol. 4.
24. Thorek, M., Modern Surgical Technic. Vol. 2:1189-1194.

55 E. Washington Street.

DISCUSSION

Dr. Paul Hollinger, Chicago: Dr. Kulvin has certainly covered the subject in every respect. I want merely to ask a question or two. I wonder why the lesion is found most frequently on the left side.

Second, the question of esophagoscopy before operation; I think this is important in the surgical approach to the lesion. A previous esophagoscopy aids in determining whether or not the procedure must be postponed due to infection in the wall. During the operation, on the other hand, the sac may be emptied by the esophagoscope to avoid spilling its contents into the mediastinum during resection. Another advantage is that the esophagoscope brings the sac into the wound more readily and delineation of the upper and lower borders may be done more efficiently.

I was surprised to hear of esophagoscopy so soon following the surgical procedure, and I wondered what indication was present for which the esophagoscopy was done.

Dr. Thomas C. Galloway, Evanston: I think it is a point to be borne in mind for the occasional operation of this type, that the two-stage operation is always safer. Perhaps this is not necessary in the hands of

a man whose technic is nearly perfect, but for one who has not done the procedure often, it has considerably less risk.

Dr. Max M. Kulvin, Chicago (closing): In regard to the diverticulum coming more commonly on the left side, it seems that there is no explanation. We always do esophagoscopy before the time of the operation. Occasionally we have missed one, and we have had no difficulty so far as the sac was concerned, but whenever we have the opportunity we do it.

We have not found it necessary to use the esophagoscope to expose the sac. These men are not asleep, and inserting the scope causes a good deal of tension. It makes the patient gurgle and spit and we have found it is not essential.

As to the early esophagoscopy subsequent to operation, I do not recall saying that it was early. I think six weeks is long enough time following operation, because by that time we are giving him solid food. I do not feel there should be any difficulty at that stage.

In reply to Dr. Galloway, some use two-stage and some one-stage. I prefer one-stage myself, and find it is easily carried out. By using the one-stage procedure, the advantage of saving the patient one more surgical experience is obvious.

NASAL SINUSITIS: PROGNOSIS AND TREATMENT BASED ON A MORE RATIONAL HISTOPATHOLOGIC INTERPRETATION

A. R. HOLLENDER, M.D.
AND
M. F. SNITMAN, M.D.
CHICAGO

Although the pendulum is swinging away from radical sinus surgery, the explanation for this trend is based solely on clinical grounds. Advances in allergy have decidedly influenced the situation, but even the allergic factor fails completely to answer why radical surgical procedures are now rejected for the large majority of sinus problems.

Not so long ago one of us (H)[1] *pointed out* that every diagnostic study of the nose and sinuses should embrace serious consideration of the prognosis. The potential outcome of a given case often sways the rhinologist toward or from surgical intervention. Can we speculate on the prognosis of chronic sinus involvement on the basis of clinical results alone? Or is it more plausible to evaluate the possible changes which take place in tissue subjected to infection?

It is our contention, from our own experience as well as that of a number of our colleagues, that the results of radical sinus surgery need be greatly improved if we are to consider it the acme of perfection in the management of simple chronic sinusitis. This view is fortified still further by data[2] obtained by questionnaire from a large group of rhinologists. These data conclusively refute the assumption of those specialists who believe that the end results of sinus surgery as hitherto practiced are highly satisfactory.

These statements are not intended as destructive criticism of the surgical methods of the past. Rhinologic therapy has passed through various stages of conservatism and radicalism, a fact which applies equally to non-surgical as well as to operative procedures. One needs only refer to the recent advances in nasal physiology to understand the efforts being made to rationalize current therapeutic methods.

In the correction of pathologic processes the endeavor, as far as possible, should be to conserve normal function of structures, or restore or repair them when they become involved by infection. There are a number of rhinologic measures which strikingly show the differences between those that are purely mechanical and those that are biologic. The former are characterized by destruction, impairment or abolition of function, while the latter typify the surgical ideal of biologic conservation. These newer physiologic principles render a departure from the older technics in rhinologic surgery highly essential to improved end results.

IS RADICAL OPERATION RATIONAL IN CERTAIN TYPES OF CHRONIC SINUSITIS?

As intimated earlier the results of radical sinus surgery need to be improved. If we assume, for example, that there is justification for removing every vestige of mucosa in operating on an antrum, any argument we present in this discussion would be irrational. We are reasonably certain, however, that there is sufficient *histopathologic proof to question the rationale* of total mucosal extirpation under certain circumstances, even though not a few rhinologists

---

Read before the Eye, Ear, Nose and Throat Section, Illinois State Medical Society, Chicago, May 19, 1943.

From the Department of Laryngology, Rhinology and Otology, University of Illinois College of Medicine.

will endeavor to prove by clinical results that they have by such radical procedure "cured" numerous patients.

A sinus membrane passes through the several stages of inflammation the same as any other body tissue. It eventually reaches the stage during which under favorable conditions it may restore itself to a normal state or nearly so. If we fail to provide the essentials necessary for the restorative changes and intervene destructively, there is no way of determining what might have ensued had conservative therapeutic procedures been employed.

The principles underlying the management of sinusitis are nc different today than they were decades ago. Ventilation and drainage when interrupted or interfered with by bacterial infection must not only be reestablished, but maintained. The question arises: "Does a destructive surgical procedure like extirpation of a sinus membrane furnish the means necessary for the reestablishment of a normal sinus?"

In the surgical treatment of the maxillary antrum for bacterial infection, it is our contention that the radical operation is outmoded. It is unessential to a cure since conservative methods frequently serve the purpose adequately. Our results and those of several of our colleagues are in strict accord with those of Hempstead,[3] who collected 1634 cases of intranasal antrostomy from the Mayo Clinic and the literature and reported 97 per cent good results. Hempstead emphasized that the window operation causes a minimal amount of injury to the lining membrane which is permitted to return to as "nearly normal" function as possible. Naturally cases must be selected for this type of operation as there is no set rule that it is suitable to all circumstances.

Van Alyea,[4] and others, have found nonsurgical procedures adequate for the large majority of patients with frontal sinusitis. Schultze[5] intervenes surgically in certain frontal sinus conditions but removes the membrane only if diseased beyond hope of recovery. In ethmoid sinusitis, however, anatomic factors enter into the problem, but even here such a simple procedure as infraction of the middle turbinate[6] has provided improved ventilation and drainage, often obviating thereby the necessity of more radical operative intervention.

HISTOPATHOLOGIC STUDIES

Our present deductions concerning the fallacy of radical operations in nasal sinusitis are the result of microscopic studies of large numbers of specimens of extirpated sinus mucosa. Our interpretation of the histopathology of sinus mucosa differs from that of most workers in that we do not consider most extirpated sinus membranes as being irreparably diseased. We believe that these membranes possess the ability of repair, if and when favorable conditions are established, principally adequate ventilation and drainage by proper attention to the sinus ostium. Nature will then carry the sinus mucosa through the process of healing as it does any other body tissue.

Roentgenograms alone or roentgenologic interpretations of filling defects may indicate macroscopic changes in the sinus mucosa, but such evidence,[7] in our opinion, does not provide ample scientific grounds for mucosal extirpation. Unless proof could be established that the mucosa has passed beyond the stage of recuperation, its removal is not justified. We do not argue against the necessity of total removal of the sinus mocosa in the presence of excessive polyp formation. Studies of numerous removed membranes have revealed that most of them are only moderately affected by inflammation and edema. Generally the lining epithelium is structurally perfect and apparently functions well. Some removed specimens show nothing more than a pure state of allergic inflammation, a state which in itself obviously contra-indicates their surgical extirpation.

Properly to evaluate nasal and sinus biopsies, it is necessary that one exercise a true appreciation of artefacts. The latter have in the past, in some instances, led to erroneous conclusions. It is significant that in a large series of biopsy studies of nasal tissue, two features are in evidence:

1. *All* biopsy specimens removed in the usual manner show more or less complete absence here and there of the overlying epithelium. This has been interpreted as ulceration[8] (Figure 1). Furthermore, oblique sections of columnar epithelium give the appearance of a stratified aquamous variety and are considered as a form of metaplasia. Proper study will, however, differentiate between a true and a false stratified aquamous epithelium (Figures 2 and 3).

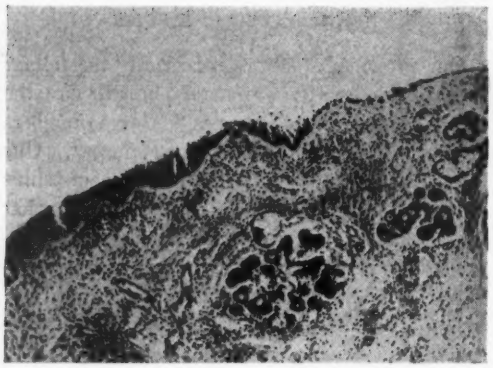


Figure 1 Middle turbinate with area of almost total loss of epithelium.

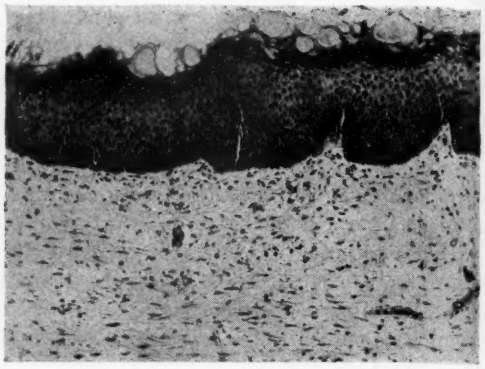


Figure 3 Ethmoidal polyp, true metaplasia of epithelium.

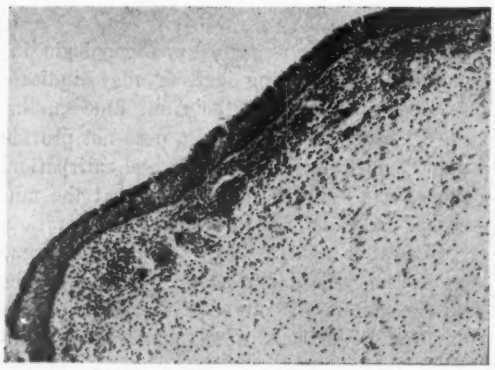


Figure 2 Antrum mucosa; oblique section of epithelium demonstrating false type of stratification.

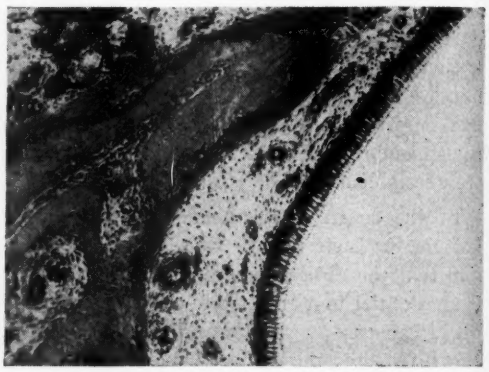


Figure 4 Normal ethmoidal mucosa with intact epithelium from non-traumatized autopsy specimen.

2. In those parts of the specimen which have not been traumatized during removal, the epithelial lining is totally intact. Such is noted, for example, in an ethmoid cell contained within a turbinate specimen or where the nasal structure *as a whole* is first fixed in formalin and then serial sections are made (Figure 4). Such is usually the case with autopsy specimens.

This study is concerned with tissues removed from patients who have not undergone repeated mutilating procedures with marked scarring, but in whom radical sinus procedures have been performed for the first time. This fact is of great significance for a final clinical interpretation. We have observed tissues with profound inflammatory reactions in the stroma, yet possessing a perfect pseudostratified ciliated columnar epithelium which from a microscopic point of view should possess the ability to function (Figures 5 and 6).

Further to bear out our views and contentions that virtually all removed sinus membranes which we studied were endowed with the power of rehabilitation, we call attention to the alterations seen in the epithelium and in the stroma.

A. Epithelium. — Normal sinus mucosa contained very few glands in contrast to numerous accumulations found in the nasal mucosa proper. This rare incidence of glands in the sinus mucosa is combined with active goblet cell formation of sinus epithelium. In some specimens almost the entire membrane is lined by goblet cells (Figures 7 and 8).

In most instances, in spite of the intensity of reaction in the stroma, a well defined ciliary border is easily discernible. Partial or total loss of the epithelial cells, suggesting ulceration, we believe to be of traumatic origin. To say that ulceration is the cause of these changes, one must demonstrate in the underlying stroma, necrotic or suppurative processes with varying degrees of granulation tissue formation. This we have not seen and it is interesting to note that the epithelial loss is associated with a smooth well formed basement membrane of variable thickness. That a true ulceration on an infectious basis does occur, we are unable to say.

Metaplasia of columnar epithelium into stratified aquamous epithelium is sometimes seen, but we have

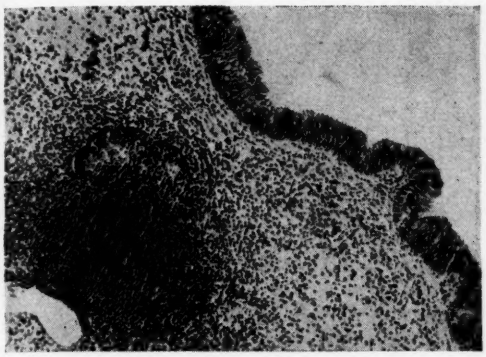


Figure 5 Antrum mucosa with intense inflammatory cell infiltration and overlying intact epithelium.

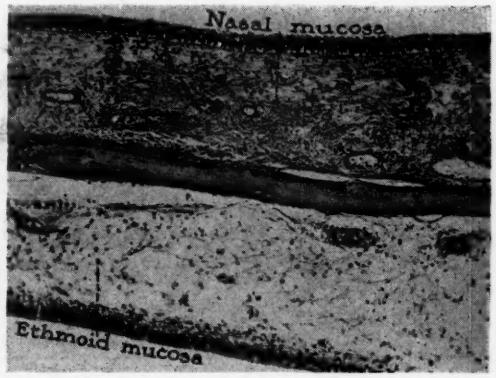


Figure 7 Nasal and ethmoidal mucosa with bony wall; absence of glands and delicate stroma of ethmoid cell.

Figure 6 Frontal sinus mucosa with findings similar to Figure 5.

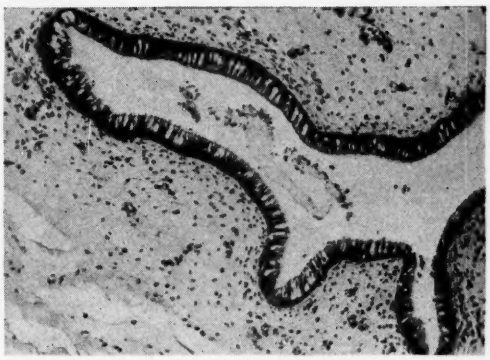


Figure 8 Antrum mucosa; marked goblet cell activity.

found it predominantly on the surface covering of polypoid growths in the sinus.

Papillary growth of epithelium is occasionally seen (Figure 9). The question arises as to which structure the epithelium or stroma is the existing factor in this overgrowth. The epithelial covering of the latter is a true pseudo-stratified ciliated columnar type.

B. Stroma. — All the biopsy specimens studied show fundamentally a basic pattern with some variations in the amount of individual cell types and edema. The pictures presented are those of a chronic inflammation with evidence of a tendency to repair (Figures 10, 11, 12).

The stroma, although undergoing varying degrees of chronic inflammation, is able to maintain and nourish a well formed and apparently functioning ciliated columnar epithelium. This is of paramount importance in consideration of the relationship of drainage of a paranasal sinus to its healing tendencies.

GENERAL AND LOCAL RESISTANCE

The outcome of an infection of the body will depend in a great measure upon the resistance of the host and the virulence of the offending organism. From another point of view we recognize that tissues have the ability to rid themselves of the products of inflammation. A good example is a deep abscess signifying on one hand a winning battle, and on the other a problem of prompt and assured healing by maintenance of external drainage. This latter fact is especially illustrated in inflammation of the nasal and sinus cavities which are constantly cleansing themselves and performing their respiratory function by means of a muco-ciliary sheet. The poor anatomic position of the sinus ostium is no barrier to this sheet as has been repeatedly shown. At all times the proper functioning of the sinus mucosa is intimately related to the drainage pathways of the nasal and sinus spaces.

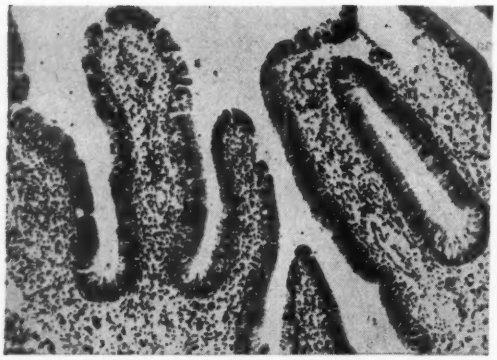


Figure 9 Antrum mucosa; papillary hypertrophy.

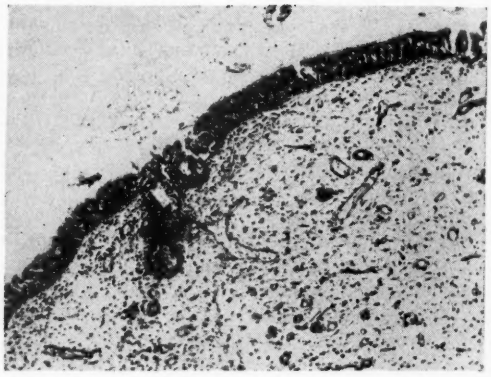


Figure 11 Frontal sinus mucosa; same as Fig. 10.

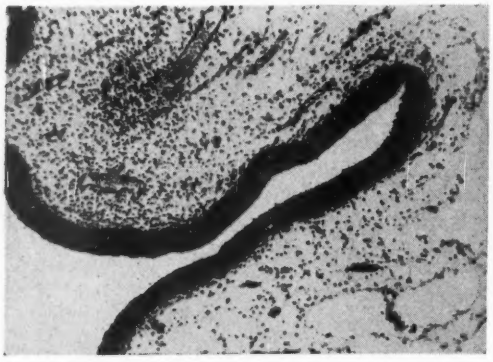


Figure 10 Antrum mucosa; chronic inflammation in process of repair.

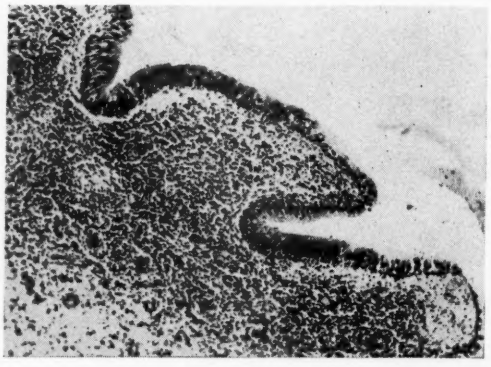


Figure 12 Antrum mucosa; same as Figs. 10 and 11.

COMMENT AND CONCLUSIONS

The main purpose of this paper is to plead for a revision of existing indications for radical operations on the paranasal sinuses. On the basis of histopathologic studies of membranes removed at radical sinus operations, we believe that we are correct in stating that many of these procedures have been unnecessarily performed in the past. We assert that unless the prognosis of a given case can be predicted with reasonable accuracy when radical operation is advised, it is far better to resort to less drastic procedures. Clinical experience as well as histopathologic evidence has demonstrated that the average sinus involvement due to bacterial infection will correct itself if and when favorable conditions are established, viz., ventilation and drainage through a well functioning sinus ostium. Most sinus membranes are not irreparably "diseased" as usually interpreted. It would be more accurate to label them "reparative" or "resisting" membranes. The prognosis of nasal sinusitis could be greatly enhanced by strict adherence to conservative therapeutic principles.

SUMMARY

1. The explanation for the more recent trend away from radical sinus surgery has been based solely on clinical grounds.

2. In the correction of pathologic processes in the nasal sinuses, the endeavor, as far as possible, should be to conserve normal function of structures, or restore or repair them when they become involved by infection.

3. There is sufficient histopathologic proof to question the rationale of total extirpation of a sinus mucosa, under certain circumstances, even though some rhinologists will claim clinical cures by such radical procedure.

4. Our interpretation of removed sinus mucosa differs from that of most workers in that we do not consider extirpated sinus membranes as being irreparably "diseased."

5. While roentgenologic methods may indicate macroscopic changes in a sinus mucosa, such evidence does not provide ample scientific grounds for mucosal extirpation.

6. Histopathologic studies of a large series of biopsies reveal that at least from a histologic point of view, the mucosa should possess the ability to function.

7. Clinical experience as well as histopathologic evidence has demonstrated that the average sinus involvement due to bacterial infection will correct itself if and when favorable conditions are established, viz., ventilation and drainage through a well functioning sinus ostium.

8. Finally, decision to extirpate a sinus mucosa frequently is incorrectly made because of failure to appreciate the significance of the clinical aspects of a sinus involvement prior to operation and the histopathologic aspects after it.

307 North Michigan Avenue
55 East Washington Street

REFERENCES

1. Hollender, A. R.: J. Florida S.M.A. 27: 27 (July) 1941.
2. Hollender, A. R.: Southern M.J. 35: 363 (April) 1942.
3. Hempstead, B. E.: Arch. Otolaryng. 30: 711 (Nov.) 1939.
4. Van Alyea, O. E.: Arch. Otolaryng. 19: 224 (Feb.) 1934.
5. Schultze, L. L.: Arch. F. Ohren-, Nasen-u. Kehlkopfh 146: 194, 1939.
6. Coates, G. M.: M. Clin. North America 22: 1565 (Nov.) 1938.
7. Salinger, S.: Arch. Otolaryng. 30: 721 (Nov.) 1939.
8. Semenov, H.: J.A.M.A. 111: 2189 (Dec. 10) 1938.

DISCUSSION

Dr. O. E. Van Alyea, Chicago: The authors have presented on the screen many convincing arguments in favor of conservatism in surgical procedures on the nasal sinuses. They have shown us specimens of sinus mucosa which were removed because of long-standing inflammatory conditions in the cavity.

The persistence of the infectious process in these cases should not be attributed to the condition of this membrane, but rather to the impairment of drainage, which interferes with the proper function of the sinus mucosa. The mucosa in these cases was not diseased; it was functioning to the best of its ability in a blocked cavity, and in most cases it would continue so to function for years. Also, in most of these cases improvement in drainage produces an early recovery from the infection. I am sure we have all observed complete cures in long-standing cases of maxillary sinusitis following intranasal antrostomy.

Similar results are attained in the frontal, sphenoid and ethmoid cavities by improvement in the drainage pathways. In cases of frontal sinus infection there is a marked tendency toward an early healing because of the location of the drainage outlet in the floor of the sinus. Only those cases persist in which there is a narrow or sealed middle meatus, or an impingment on the nasofrontal channels by invading frontal or ethmoid cells.

Persistence of infection in the antral and ethmoid cavities is also often associated with a narrowed middle meatus, but may be due merely to an occluded ostium or blocked hiatus semilunaris. In many cases marked improvement in an inflammatory condition involving one or more of the anterior group of sinuses follows a simple infraction of the middle turbinate or the removal of polyps.

Drainage from the sphenoid is hampered by the location of the ostium near the sinus roof, and the presence of recesses and partial septa in the cavity, yet in most cases an occluded ostium further impedes drainage. These cases usually respond only if an adequate opening is placed in the anterior sphenoid wall.

It is gratifying to note the tendency toward conservatism in rhinologic surgery, as mentioned by the authors. A few years ago a wave of radicalism swept over the country and left in its wake many hopeless nasal invalids. We are occasionally confronted by an individual who has been subjected to many radical operations and who is still searching for relief. I feel with Drs. Hollender and Snitman that many of these operations were ill-advised; that the sinus mucosa in many of these cases was not diseased, but was resisting disease and was capable of being restored to a normal state at such time as adequate drainage would come to its aid.

Dr. Hans Brunner, Chicago: The paper of Drs. Hollender and Snitman is important from the theoretical as well as from the practical point of view. As far as the theoretical point is concerned, I agree with Dr. Snitman who emphasized that the absence of the epithelium is as a rule an artefact. It is in general very difficult in histology to make a diagnosis of something which is not present. But if the epithelium only is absent and the basement membrane is intact, it can be scarcely assumed that a necrosis or an ulceration restricted itself to the epithelium only. However, I also want to emphasize that even the accumulation of lymphocytes does not necessarily indicate inflammation, at least not an inflammation which necessarily subsides with the development of a scar. On the contrary, even a great accumulation of lymphocytes may disappear leaving the nasal mucosa intact.

As far as the practical point is concerned, I agree that in the past there was too much radical surgery performed on the sinuses. That is understandable. Every new surgical procedure is employed at the beginning with more enthusiasm than critical judgment. It is far easier to work out a new surgical technic than to find the indications for it. At present the enthusiasm for radical surgery on the sinuses has subsided, but one gets the impression that the recent enthusiasm for conservative treatment leads to an overindulgence in that type of treatment. That is particularly true regarding the irrigation treatment which

at present has developed to an actual hydrotherapy of paranasal sinuses. I do not doubt the merits of that treatment but I do doubt the value of its overuse. I saw cases which were irrigated daily, occasionally even twice daily. That is certainly an improper procedure, which can be realized taking into consideration the mucosa of the ear, which is not hidden as is the mucosa of the sinuses. Every irrigation of a chronic otitis produces a hyperemia of the mucosa and it is well known that continuous irrigation leads to persistent otorrhea. This is even more so in relation to the mucosa of the paranasal sinuses which is more sensitive than the mucosa in a chronic otitis.

Dr. A. R. Hollender, Chicago (closing): I wish to emphasize that before any operative procedure on the sinuses is undertaken one should be able to anticipate the prognosis of a given case with some degree of certainty. This is, however, impossible with radical sinus operations. Many rhinologists undertake radical sinus surgery without due consideration of the prognosis. This whole problem resolves itself then not only in an appreciation of the significance of the clinical aspects of sinus disease *before* operation, but also an evaluation of the histopathologic aspects *after* operation. In other words, the operation must be justified by a microscopic study of the extirpated sinus membrane. Unless this is done the removed membrane should not be considered irreparably diseased. In most instances this implies that the radical surgical procedure was unnecessary. It is our firm belief, as pointed out in the text of the paper, that a large number of radical sinus operations cannot be justified on a histopathologic basis.

MEDICAL, NOT SURGICAL, AFTER-CARE OF BRAIN INJURIES AND CEREBRAL ASTHENIA

HAROLD S. HULBERT, M. D.
CHICAGO

Bio-Chemistry. — Impaired brain cells have the same nutrition needs as do healthy or growing nerve cells; they should not be starved temporarily during the acute phase of surgical management following injury. Medical management should supplement and be concomitant with surgical treatment. Brain cells in disease, local or general, have the same wants. Their physiological metabolism, insofaras we know, are based on a few chemicals and compounds: intracellular oxygen, simple carbohydrates such as glucose, water, fats and oils (uncooked), iron, magnesium, manganese, unconjugated calcium, unconjugated phosphorus, sodium, potassium, chlorine, pro-vitamins A and the B group, and alkalies to combat the waste metabolic products of lactic and phosphoric acid acidosis.

The injured or impaired or exhausted brain needs more of them than does the normal brain.

During Unconsciousness. — Unconsciousness from injury, as seen on the surgical wards, or from apoplexy, as seen on the medical wards, presents the some dilemma: shall we dehydrate the patient to reduce intracranial pressure, or shall we hydrate the patient so that the brain cells may be given their metabolic chemical needs? There are pros and cons. The question is like how long shall we leave on a tourniquet? Or shall we say it is physics vs. chemistry?

While a patient is unconscious, then his brain cells' needs may be supplied partly by rectum, partly intravenously, and partly subcutaneously. Water insoluble stuffs must be given per rectum and at times different from water soluble rectal feedings. Assuming the patient gets four proctoclysis cans per 24 hours, the nutrients may be added when the can is down to its lowest one-third. Add four heaping teaspoonfuls of powdered glucose, one teaspoonful of glycerophosphate, 7-10 grains of epsom salt, 5 or 6 grains of fresh ferrous sulfate (by dissolving non-enteric coated tablets of ferrous sulfate), one ounce of mineral alkali water, 50 mg. of ascorbic acid, calcium gluconate in solution or in suspension, and an uncertain amount of vitamin B complex from yeast or rice but not from liver. I think it preferable not to give the calcium (calcium gluconate) and the phosphorus (glycerophosphate) at the same time lest they conjugate into a calcium phosphate from which nerve cells can absorb neither the calcium nor the phosphorus, but they be given in alternate protoclysis cans.

If the unconsciousness lingers over three days peptonized milk may be largely substituted for the water in the protoclysis, and the water soluble medicants mentioned above added to the peptonized milk. Other nourishments may be added one at a time.

Also per rectum, and by a small bulb syringe, once or twice a day *between* the protoclysis administrations there may be given ½ oz. of malt with cod liver oil and phosphorus to which has been added the contents of one perle of 25,000 units of vitamin A.

While the patient is unconscious 100. mg. of thiamin can be given once a day by hypo.

For sodium, potassium and the needed trace of manganese the body's reserves and fluids must be the source of supply.

Intra Cranial Insults. — Apoplexy and other vascular conditions such as thrombi and emboli with infarcts and cerebral softenings may be treated according to the above program. Vasodilators are indicated, especially the nitrates. These are more useful than potassium iodide later. Vascular conditions include the "bends" after too rapid decompression and the results of nearby explosions or of flying too high.

The usual treatment for shock is always in order with any unconsciousness of cerebral origin.

Treatment During Consciousness. — After brain injury from trauma from without or insult from within, after cerebral asthenia post infections or toxic, after tryparsamide or malaria or shock treatment, after influenza or any prostrating and exhausting condition, after nerve (brain cell) exhaustion from too protracted or over-emotional strain, and after general or local (brain) malnutrition the same medical program by mouth and by hypo plus some modifications is indicated. For the sake of lucidity it is stated:— Rx 1. Malt with cod liver oil and phosphorus, one tablespoonful a day, most days. Rx 2. Vitamin A, 25,000 units per perle, one a day five days a week. Rx 3. Thiamin 100. mg. by hypo once every 2 to 7 days, for weeks; to be supplemented by Thiamin 5. mg. tablet by mouth three times a day or one at each meal, or smaller doses or less frequent doses by mouth if there is diarrhoea. Rx 4. If anemic, ferrous sulfate, 3 or 5 grain tablet, plain or enteric coated, in broken courses or in waves. Specifically, if an overmenstruating female, 15 grains a day for the first ten days after each menstrual period stops. In other anemic cases, if using the three grain tablet of ferrous sulfate, always after meals, e. g. Feosol, 18 grains one day, 24 grains the next day, 18 grains the next day and none the next day, continuing this rhythm which may be expressed for the patients' convenience in terms of tablets 6-8-6-0-6-8-6-0- etc., 6 tablets one day, 8 the next, 6 the next, and 0 the next, and repeat for months. If 5 grain enteric coated tablets are given, the numbers on successive days are 4 tablets — 5-4-0-4-5-4-0- etc., for months. This may be reenforced by Rx 5, Reticulogen 0.5 cc once a week by hypo, added to 1 cc of Thiamin equalling 100. mg. in the same hypo syringe before administration. Rx. 6. Any alkaline mineral water between meals or an alkaline ash diet, e.g. juice of 4 to 6 oranges a day. Rx 7. Calcium gluconate 15 grains between meals twice a day on every third or fourth day, e.g. 10 A. M. and 3 P. M. on Tuesdays and Fridays. Rx 8. Magnesium sulfate, 15 or 20 grains, in hot water and fruit juice once a week, e.g. Sundays. (Caution. Do not spill sulfate crystals on the floor or carpet for it attracts moths and encourages their breeding. Mix it over the sink.) Rx 9. Vitamin B Complex. Note, persons with high blood pressure may be worsened by taking B Complex from liver but may be benefited by taking B Complex from yeast or rice or wheat germ. Rx 10. If thinking is fuzzy and monotonous as in confusion or in brooding Niacin Amide 100 mg. tablets with a crease is taken as follows: ½ tablet or 50 mg. taken half-way *through* lunch and 1 tablet or 100 mg. taken *during* supper. Rx 11. Glucose, corn sugar, or even corn syrup (dose 3 tablespoonfuls), 3 heaping teaspoons of the dry powder in orange juice and water; mix, drink before arising and repeat at 10 A. M. and 4 P. M. and 10 P. M. daily; also glucose in place of cane sugar for table use, using 3 heaping teaspoonfuls in coffee or on cereal etc. as it is only one-third as sweet to the taste. Rx 12. Glycerophosphate, 1 teaspoonful of elixir a day except on calcium days. Rx 13. For head pains or for emotional tension Larodon 5 grs. one every 4 or 5 hours as needed, for example in occipital and basal head injuries more Larodon on low or falling barometer days. Rx 14. Alkaloids as needed, e. g. prostigmine by hypo at first whether or not unconscious, followed by oral. Basal head injuries are commonly found in sailors standing, let us say, on the second deck and a penetrating bomb falls through to the third deck where it explodes. The deck above buckles upwards, and the force is transmitted through the legs and spine up to the base of the skull.

Besides these medicants, the program should include long, gentle, purposeless (i.e. duty-free or not to any goal), quiet walks, and eating 60 to 80 calories per hour while walking an hour.

The diet should be high in uncooked fats and oils, and should be high in "white foods and white food stuffs" (e.g. a chocolate cake is made mostly of white food stuffs although stained brown by the chocolate).

Concomitant physical conditions such as menopause, hyper or hypo tension, syphilis, duodenal ulcer, spastic colon, etc. require their treatment.

Nerve Cell Asthenias. — Brain asthenia may develop in warriors and in civilians. Combat fatigue, operational fatigue and air fatigue — to use modern terms be they well chosen or poorly chosen terms —, and the unnamed fatigue from over thinking such as too vivid over-preimagining or regretful haunting memories is enhanced by physical ill health as from malaria, etc., over activity or poor hygiene and being too sedentary.

It can be mentioned but it can not be stated that there is a concomitant fatigue of the sympathetic nerves. If that view is accepted then many fatigue or exhaustion somatic functional symptoms are explicable. There is more than a modicum of truth in the often heard statements, "I am too tired to sleep," "My sleep center is tired out and does not work," "I am never refreshed." May we not assume what seems clinically verified, that what (medication and program) is good for brain cells is good for any or all other nerve cells? I think so. It is logical but it is only thinking by analogy hence subject to errors.

In civilians with exhaustion asthenia this medical program is effective irrespective of the cause. Among the causes a few may be mentioned, viz., insufficient vacations and respites from work, alcoholism, withdrawal treatment for alcoholism, narcotic addiction, melancholia, grief, emotional exhaustion after shock, psychasthenia, panic, neuroses, psychoneuroses, hysteria, anxiety tension, prisoners e. g. military prisoners and those beseiged and those defeated and on retreat), virus or bacterial encephalitis, delirium from any cause, eclampsia, chorea and/or rheumatic asthenia, infarcts, vascular diseases of the brain, automobile etc. head injuries, and before and after surgery of the brain, e. g. tumor.

Lastly, in malnutrition and deficiency diseases it must be assumed that there is also an intracranial deficiency neuritis. The treatment is the same as outlined for the nervous system, plus the repair and restoration of bodily health and vigor.

Of course where there is a diagnostic lumbar puncture, 10 mg. of Merck's crystalline Thiamin called Betabion may be dissolved in 5 cc of spinal fluid and reinjected: the complications are neglible, and on the 8th and 15th day 30 mg. may be given as is so helpful in tabes and gastric crises.

A word of caution: once injured brains do not withstand at all well subsequent injuries — traumatic or internal, chemical (toxic) nor radiant (diathermy or infra red), nor extremes of heat or cold.

Post-traumatic dementia is more severe where the treatment is first surgical and then followed by neuropsychiatric brain nutrition treatment: post-traumatic dementia is less severe where the treatments are combined from the onset.

CONCLUSIONS

Instead of sedatives which depress brain cell metabolism, increasing brain cells' needed nutrients increases hope that impaired but not quite destroyed brain cells may recover.

The brain cells which have been injured need more nourishment and need nourishment earlier (after injury) and more continuously than do unimpaired brain cells.

The chemical wants of brain cells are few and simple. They include water, oxygen, sodium, and potassium, all of which they can always get from the blood and without medication, ferrous iron, unconjugated soluble calcium, unconjugated soluble phosphorus, simple glucose, some simple (uncooked) oils and fats, many of the pro-vitamins of the A and of the B groups, and some other known and some suspected vitamins.

Mechanical treatment of injured brain cells without chemical brain cell nourishment causes secondary brain cell deficiency neuritis which contributes to post-traumatic dementia and/or asthenia.

The medical program suggested is not incompatible with sulfa treatment nor open surgery nor present surgical management except dehydration to try to diminish intracranial pressure. It is a needed supplement and need not be delayed nor secondary in time or sequence: it should be concomitant.

During unconscious states from external trauma or from vascular insults chemical overnourishment can be given partly via protoclysis and the water insoluble medicants given also by rectum by small syringe bulb between protoclysis administrations.

During and after brain diseases the same program is indicated.

In brain asthenia with consciousness the same chemical program may be given by mouth. Some of these conditions are named.

Deficiency in brain cell nutrition and metabolism may be encountered in civil and in military cases, and should be treated according to the basic needs and wants of the cells of the brain.

THE USE OF GELATIN AS A BLOOD SUBSTITUTE

HOWARD C. HOPPS, M. D.
CHICAGO

Among the benefits derived from the present war is the increased stimulus for the study of hemorrhage and shock, the mechanisms by which they operate, and the means to prevent or combat them. The efficacy of whole blood, plasma, or serum in the treatment of such conditions was discovered during World War I and is now established beyond question. If it were not for the technical difficulties of securing these substances in adequate quantities and in preparing them for storage and subsequent use, there would be little need for further search for an ideal blood substitute. As the most logical substitute for human blood or derivatives thereof, the blood of lower animals or certain of its protein fractions have been considered. Beef plasma and beef serum albumin have been the principal substances of this type employed and, although they possess the proper physical characteristics for a successful blood substitute, they carry with them the unfortunate quality of antigenicity, so that severe allergic reactions occur following their administration to hypersensitive individuals.

*From The Department of Pathology, University of Chicago.

Presented before the Illinois Society of Pathologists, 103rd Annual Meeting, Illinois State Medical Society, May 18, 1943.

The primary objective in the treatment of either shock or hemorrhage is the restoration of blood volume. Crystalloid solutions are adequate to restore blood volume in uncomplicated hemorrhage, but are inadequate in conditions of shock, inasmuch as, in the latter case, capillary endothelium is unduly permeable and permits the rapid escape of substances of small molecular size. In a recent paper by Taylor and Waters[1], the qualifications for a successful blood substitute are given as follows:

"(a) The molecule of the dissolved substance must be of such a size that the fluid will not leave the vessels too freely.

"(b) The solution must exert an osmotic pressure and possess a viscosity approaching as closely as possible that of whole blood; these qualifications depend upon molecular size and shape.

"(c) It should be as nearly as possible isotonic with the contents of the erythrocytes.

"(d) It must of course be non-antigenic and innocuous in every respect. In addition, it should be readily available, preferably cheap, and capable of being quickly and easily prepared for intravenous administration."

It should be emphasized that in order of importance rank first, freedom from harmful effect, second, efficacy in the use for which it is intended, and last, ease of preparation and facility with which storage and administration can be carried out.

In a search for the substance which meets these requirements, many materials have been investigated, such as gum acacia, pectin, methyl cellulose, and gelatin. Acacia has been used rather extensively during and since the last world war so that a very adequate period for evaluation has elapsed. It is pretty generally accepted that gum acacia is not a good blood substitute because, 1. Preparations of acacia may vary widely and some of these possess a rather high degree of primary toxicity and cause severe reactions and even death when injected. 2. Acacia is deposited in and stored for long periods of time in many organs and tissues, particularly in the liver and kidneys where there may be marked untoward effect on function. 3. Acacia is antigenic and has been responsible for severe allergic reactions. Pectin and methyl cellulose are two more recent substances to be investigated in these respects. They have apparently been used with considerable success in the restoration of blood volume in shock and hemorrhage and

have not given rise to significant primary toxic effects, nor have they been found to be antigenic. Here again, however, deposition and storage occurs in various parenchymatous organs, as a result of which normal function of these organs may be seriously altered.

Gelatin was first used as a blood substitute by Ringer in 1885. He found that he could obtain recovery in a frog's heart exhausted by long perfusion by saline if he added gelatin to the solution. Hogan, in 1915, was the first to infuse this substance into human beings; he reported success in six patients so treated. It is difficult to understand why gelatin has not been more extensively investigated from the standpoint of a blood substitute. A part of this reason may rest with the fact that during the early period of investigation, the substances from which gelatin was prepared were often grossly contaminated and reports were published to the effect that gelatin contained tetanus spores. With the present methods of manufacture of gelatin, such difficulties have been overcome.

Gelatin is a heterogeneous mixture of protein fractions which vary from 10,000 to 90,000+ in molecular weight and which exhibit variation in properties such as solubility, viscosity, etc. Several different types of raw material are commonly used in the preparation of gelatins, e.g. bone, calf skin, and pig skin, and each of these substances may be treated in a variety of ways before the final product is obtained. As a result of this, many types of gelatin are produced which differ widely in their physical and chemical characteristics and in the physiologic action which they exert when fed or injected parenterally. This very important fact has been overlooked by almost all of the early workers who have investigated the biologic action of gelatin and is undoubtedly responsible for many of the conflicting reports upon primary toxicity, physiological effects, etc.

The work which is being done on gelatin at the University of Chicago is in the nature of a cooperative study in which Dr. Evans and Dr. Carter Johnson are investigating the chemical properties of various gelatins and means by which these substances can be refined or fractionated. Dr. Brunschwig is studying the metabolism of gelatin when introduced into the body, and Dr. Cannon and I are investigating possible toxic or immunologic properties of gelatin. Dr. Levinson and his group at Michael Reese Hospital are studying the effects of gelatin in hemorrhage and shock. The Edible Gelatin Manufacturers Research Society have provided a grant for these studies, and have furnished us with many different types of gelatin and with information as to their preparation and physical properties. We have found a rather wide range of physiologic action in these various samples and from a preliminary survey have selected several preparations which are not pyrogenic nor toxic, for more intensive study.

Dr. Levinson and his group have tested a number of these gelatins as to their efficacy in the treatment of shock in dogs and have observed effects which differ widely with the preparations used. Some of these gelatins were definitely harmful in their action. Several of the gelatins tested, however, were very effective in the treatment of shock and in some instances appeared to be superior to blood serum in this respect. Similar successes have been reported during the last year by other investigators using isinglass, a gelatin made from the swimming bladders of fish, and ossein gelatin which is made from beef bone. In a recent report, Ivy and co-workers[2], who investgated the effect of a wide variety of various blood substitutes in resuscitation after massive hemorrhage, conclude that, "Regarding gelatin, the material we have used is definitely superior to citrated plasma and to the other artificial blood substitutes tested, but it falls short of perfection. Further refinement of the product is required."

An important point of difference between gelatin and acacia, pectin, or methyl cellulose, is the fact that gelatin alone of these substances is metabolized to significant degree within the body, and it is this very decided advantage which accounts for the fact that gelatin is not stored in the body in the sense that these other substances are. In a recent series of observations on the effects of gelatin and gum acacia infused into dogs and rabbits Hueper states[3] "The behavior of gum arabic and gelatin is explained by the fact that gum arabic is relatively unstable and tends to become partially hydrolyzed while gelatin is readily degraded by the proteolytic enzymes present in the body into amino acid constituents, which are used in the

normal metabolism. It is apparently for these reasons that gelatin, parenterally introduced, does not give rise to appreciable phenomena which form a typical and remarkable feature of the organic lesions elicited by gum arabic."

In our studies on the effect of various gelatins on rabits and guinea pigs, doses as large as 2 gms. per Kg. were given intravenously. From single injections or repeated injections on alternate days, we have observed no significant morphologic changes either grossly or microscopically which could be attributed to gelatin. The effects of such infusions have been studied in both normal and protein-depleted rabbits. We have also studied the fate of a diazo-gelatin compound which was prepared for us by Dr. Johnson. This compound possesses an intense red color and is coagulated by Bouin's solution, so that it should be possible to identify this material in proper histologic preparations if it is deposited in tissues. In two rabbits which received approximately 1 g. and 1.5 g. of this substance intravenously, none was visible in the tissues microscopically at 40 and 48 hours after its administration. As further evidence of lack of storage, Drs. Evans and Johnson, in studies with a gelatin solution which had been iodized with radio-active iodine, found, in a typical experiment, that a dog which had been infused with this substance contained, 72 hours after injection, approximately 1½ per cent of the injected gelatin in the liver and a similar amount in the kidneys. Other tissues contained less.

The major part of the gelatin injected intravenously into animals probably leaves the blood stream within 12-24 hours. Exact determinations are difficult because there is no quantitative test for gelatin which will differentiate it from many other proteins. Approximately 50 per cent of infused gelatine is lost in the urine. The remaining 50 per cent is metabolized in greater part.

Many experiments have been done to determine the efficacy of gelatin as a food source from which body protein may be synthesized. They are in agreement that although gelatin is metabolized (80 per cent or more), it is incapable in itself of contributing to the formation of more than a very small amount of body protein. According to a report by Weech and Goettsch[4], gelatin has a potency value of — 0.093 as compared with 0.616 for egg white. Whipple, et al[5], state that gelatin alone added to the basal diet causes very little plasma protein production, but that, when supplemented by tryptophane, it gives a large protein output. In a later report[6] it is stated that gelatin plus cystine and either tryptophane or tyrosine gave a substance whose efficiency in regenerating plasma proteins was the equal of any other protein tested up to this time (1939). Other evidence for the digestibility of gelatin is provided by the observations of several investigators who have used a gelatin tolerance test for determining liver function and who have found that in normal fasted individuals, amino acids in blood and urine rise moderately after gelatin feeding. Dr. Brunschwig and his collaborators[7] have found that the daily injection of 150 cc. of 10 per cent gelatin solution into protein depleted dogs results in an increase in both total urinary nitrogen and in urinary non-protein nitrogen. A positive nitrogen balance is obtained and a considerable part of the gelatin nitrogen is retained. There is no evidence of a prolonged slow excretion of the retained gelatin after its administration has ceased. From these results it seems likely that a gelatin may be found which will be of value in parenteral feeding as a source for the synthesis of body protein.

There are certain peculiarities in the reaction of the blood following the injection of gelatin intravenously, changes which are similar, qualitatively at least, to those elicited by acacia, pectin, methyl cellulose and other macro-molecular substances. Hueper[3] has called these changes the macro-molecular hematological syndrome. The most striking feature is a marked increase in sedimentation rate. There is also a transient leucopenia and reduction in erythrocytes. Hueper believes that this represents an expression of the disturbances produced in the equilibrium of the colloidally dispersed macro-molecules of the plasma.

The gelatin which we have studied most intensively is one which is prepared from pig skin and which has a relatively high viscosity and gel strength. It is non-pyrogenic. A 10 per cent solution of this gelatin in saline, adjusted to pH 6.8-7.0 and autoclaved at 15 pounds for 30 minutes has been given to rabbits, intravenously, 20 cc. per Kg. Following a single dose, the in-

creased sedimentation rate usually reaches a maximum one or two hours following the completion of infusion. This maximum is then maintained for 24 hours and then drops off to approximately normal by three days. Marked agglutination of erythrocytes can be seen even grossly in oxalated blood when a hanging drop preparation is made. *In vivo* observations, utilizing the transparent ear chamber technique in rabbits, has shown that marked agglutination of erythrocytes occurs intravascularly as well as in the test tube or on the slide. At first there are only occasional small clumps of cells. This progresses until almost all af the erythrocytes are involved and irregular clumps containing over a hundred cells can be seen. These clumps are entirely different from rouleaux in that they are quite irregular in outline and integrity of the individual cells is lost to a considerable extent (morphologically). These clumps are not of rigid structure, but appear something like tiny oil droplets which stick together and exhibit moderate deformity of shape, yet are capable of shifting around on each other while maintaining their intimate contact. These clumps can be squeezed into sausage-shaped masses if this is necessary for their passage through tiny venules or capillaries and there is no evidence that they cause embolic phenomena. Leucocytes do not participate to an appreciable extent in this agglutination nor is there significant sticking of leucocytes to the endothelium of the vessels. Along with these changes, there is observed a decrease in the leucocyte count of approximately 30-40 per cent which persists 5-24 hours, and a moderate decrease in erythrocytes and hemoglobin over and above that attributable to hemodilution. The properties of this same gelatin when modified by various chemical procedures are being studied also, in an attempt to eliminate the undesirable effect upon erythrocytes. A preparation has been made which causes little change in the blood sedimentation rate in rabbits. Observations to determine the effect of this substance on R.B.C.'s intravascularly have not yet been done. This material has been given to a considerable number of patients by Dr. Brunschwig without significant toxic reactions.

Studies on the antigenicity of various gelatins is in progress and there is little to report at this time. From the observations of others, however dating back to 1908 when Dr. Wells first demonstrated that a single preparation of gelatin was non-antigenic, presumably because of its deficiency in aromatic amino acids, it is very probable that gelatins which are suitable for use as blood substitutes will be found which are non-antigenic. An immunologic study of various types of gelatin is necessary because of the few reports which indicate that certain gelatins are mildly antigenic. The most recent report of this sort is by Taylor and Waters[1] who state that the gelatin which they used, isinglass, caused mild but definite anaphylactic reaction in dogs which were reinjected with this substance after an appropriate interval.

In summary, certain selected gelatins may be stated to show considerable promise as substitutes for blood in the treatment of shock and hemorrhage because of the following properties:

1. They are relatively free from primary toxic action except for the fact that they cause agglutination of erythrocytes. It is possible that this property may be eliminated by the proper chemical treatment of the gelatin solutions.

2. They apparently do not give rise to storage phenomena as do acacia, pectin, and methyl cellulose.

3. They possess slight if any antigenic action.

4. They are effective in the treatment of hemorrhage or shock.

5. They may be utilized by the body for purposes of nutrition.

6. They are readily available in large quantities and can be easily and inexpensively prepared for intravenous administration.

BIBLIOGRAPHY

1. Taylor, N. B., and Waters, E. T. 1941. Canad. Med. Assoc. J., **44**: 547.
2. Ivy, A. C., Greengard, H., Stein, I. F. Jr., Grodins, F. S., and Dutton, D. F. 1943. Surg. Gynec. and Obst., **76**: 85.
3. Hueper, W. C. 1942. Am. J. Path., **18**:895
4. Weech, A. A. and Goettsch, E. 1939. Bull. Johns Hopkins Hosp., **64**: 425.
5. Madden, S. C., George, W. E., Waraich, G. S., and Whipple, G. H. 1938., J. Exp. Med., **67**: 675
6. Madden, S. C., Noehren, W. A., Waraich, G. S., and Whipple, G. H. 1939. J. Exp. Med., **69**: 721
7. Brunschwig, A., Scott, V. B., Corvin, N., and Moe, R. 1943. Proc. Soc. Exp. Biol. and Med., **52**: 46

THE PERIOD OF HOSPITALIZATION FOR PREMATURE INFANTS

CHARLES NEWBERGER, S.B., M.D.*
Consultant in Maternity and Infancy
CHICAGO

The question of the average hospital stay of prematurely born infants was recently asked in the Division of Maternal and Child Hygiene. A search of the literature for the past five years, showed that while much has been written about the incidence of prematurity, the possible factors in etiology, the management, the mortality, and the means for lowering this loss, very little stress has been placed upon the matter of length of stay in the hospital. The three references noted with regard to this item gave the average length of hospital stay as 20½ days, 30½ days, and 43 days, respectively.

Desirous of further information on this subject, and aware that others, particularly pediatricians and public health officials, would be interested in current data, a questionnaire was sent to twenty of the larger hospitals in Illinois. This comprised the following four queries:

1—During the twelve month period, how many premature infants (babies weighing below 5½ pounds) were born at your hospital?

2—Of this number, a) how many were stillborn? b) how many were born alive?

3—Of those born alive, how many died in the hospital, and what was the age of each infant at time of death?

4—Of those born alive, how many were discharged from the hospital, and what was the age of each infant at the time of discharge?

Replies were received from seventeen of the twenty hospitals, with data from three of these incomplete. (See Table 1).

TABLE I

Hospital	Total number prematures	Stillborn prematures	Born alive	Premature babies died in hospital	Discharged
1*	292	46	246	43	203
2	123	25	98	31	67
3	59	14	45	14	31
4	52	4	48	15	33
5	107	19	88	19	69
6	54	10	44	12	32
7*	131	26	105	25	80
8	56	14	42	9	33
9	83	13	70	6	64
10	64	11	53	15	38
11	53	6	47	18	29
12	49	14	35	15	20
13	53	9	44	15	29
14	81	18	63	20	43
15	134	6	128	30	98
16	101	16	85	24	61
17*	65	3	62	20	42
Total	1557	254	1303	331	972

*Data incomplete.

As shown on the table, 1557 premature infants were born, of whom 254 (16.3%) were stillborn, and 1303 (83.7%) were living at time of birth. Of these 1303 living prematures, 331 (25.4%) died in the hospital, and 972 (74.6%) were discharged alive from the hospital.

Data as to age of those babies who died in the hospital, and of those who were discharged from the hospital, are available for 900 prematures. Of these 900 infants, 263 (29.2%) died in the hospital; age at time of death varied from 2 minutes to 93 days. The average length of life for this group was 2.4 days.

Six-hundred thirty-seven prematures (70.8% of those with data), were discharged alive from the hospital. The average hospitalization period for this group was 24.5 days, with extremes in individual babies ranging from 3 days to 122 days.

In the entire group of 900 premature infants born alive, for whom data is available as to length of stay in the hospital, the average period was 18 days.

SUMMARY: 1) Of 1557 premature infants, 16.3% were stillborn, and 83.7% were born alive.

2) Of 1303 living prematures, 25.4% died neonatally in the hospital; 74.6% were discharged from the hospital.

3) Of 900 infants whose hospitalization period is known, 29.2% died neontally, from 2 minutes after birth to 93 days, — the average hospital stay was 2.4 days; 70.8% were discharged living from the hospital with length of hospitalization ranging from 3 days to 122 days, and with an average for this group of 24.5 days.

4) If all 900 infants born alive and for whom hospitalization period is known, are considered, regardless of whether death occurred or discharged as living, the average length of stay in the hospital was 18 days.

5038 Drexel Blvd.

*From the Division of Maternal and Child Hygiene, Illinois State Department of Public Health.
Acknowledgement is made to the hospitals who participated in this study.

Abstracts

THE INTENSIVE TREATMENT OF EARLY SYPHILIS WITH MAPHARSEN COMBINED WITH ARTIFICIAL FEVER

Norman N. Epstein, M. D., Rees B. Rees, M. D., and Henry D. Brainerd, M.D., San Francisco, Calif. In AMERICAN JOURNAL OF SYPHILIS, GONORRHEA AND VENEREAL DISEASES, 28;4;452, July, 1944

A PRELIMINARY REPORT

Summary

1. A method of treatment for early syphilis combining massive arsenotherapy with artificial fever therapy has been described.

2. This method requires eight days for its completion. A dosage of 0.72 to 96, grams of mapharsen plus two episodes of artificial fever consisting of 5 hours each of a temperature of 40.5° C. (105° F.) to 41.2° C. (106° F.) were given.

3. Two cases of seronegative primary, six of seropositive primary and sixteen of secondary syphilis were treated.

4. Two cases of arsenic-resistant early syphilis responded with excellent effects to the treatment.

5. The period of observation in the group treated is too short to speak of final therapeutic results. The trend indicates results similar to those of other methods of massive arsenotherapy.

6. Eleven, or 45 plus per cent, have been lost from observation. Five of these are known to be in the Armed Forces.

7. The addition of fever therapy to massive arsenotherapy of early syphilis decreases the toleration of mapharsen but increases its therapeutic efficacy.

8. One instance each of three major complications was encountered, namely, encephalomyelitis, peripheral neuritis, and ninth-day erythema.

9. Mapharsen, 960 mg., when combined with artificial fever therapy and administered within a period of eight days, is not a safe dosage.

10. Liver function studies in eight of the patients by means of the hippuric acid test, indicated a depressed liver function during the treatment.

FATALITIES ASSOCIATED WITH ELECTRIC SHOCK TREATMENT OF PSYCHOSES

Alexander Gralnick, M.D., Central Islip, N. Y.

In ARCHIVES OF NEUROLOGY AND PSYCHIATRY, 51;4;402, April, 1944

A small number of deaths due to electric shock have been reported in the literature since the introduction of electrotherapy. Kolb and Vogel estimated a death rate of 0.05 per cent in 7,207 cases, and Impastato and Almansi, a mortality rate of 0.8 per cent in 11,000 cases. As a rule, death is due to a defect in some organ other than the brain — usually the heart — which is aggravated by the convulsive treatment. However, some deaths are completely unexplainable. Impastato and Almansi, Ziegler and Ebaugh and his associates reported cases in which failure of the heart played the deciding role. Cash and Hoekstra and Ebaugh and associates recorded fatalities in cases in which curare was given before the electric convulsion.

Cash and Hoekstra stated that death came suddenly, about two hours after the treatment, and was probably of cardiac origin. Ebaugh and associates stated that immediate pulmonary arrest caused death.

No definite conclusion can be drawn with respect to the first case because of the absence of autopsy evidence. However, the acute nature of the patient's death, which followed so closely on her treatment, makes it logical to suspect some connection between the two events. It is possible that in this patient, as in a few of the cats studied by Alpers and Hughes, more extensive hemorrhages occurred in the hypothalamic region, sufficient to cause the hyperpyrexia and status epilepticus. The fact that the patient died one week after her last treatment speaks against this possibility, but the exact time of occurrence of hemorrhage after treatment is not known. Further, it is possible that, among other areas injured, the current produced damage to the cells in the region of the already labile heat-regulating center. These changes could have been associated with punctate hemorrhages and subsequent edema to produce the same result. While it is unwise to speculate too much about this case, I feel that one is only avoiding the issues involved if one disregards this death or attributes it merely to "excitement and exhaustion." Fatalities of this nature warrant continued study.

SUMMARY

Of 2 patients whose deaths were associated with electric shock treatment, the first died one week after her fourteenth treatment in a hyperpyretic state associated with status epilepticus. The second patient died two days after his second treatment. Autopsy in the second case disclosed evidence of cerebrovascular syphilis and other changes which were possibly due to the treatment itself. However, the alterations were not sufficient to account for death. A review of some of the pertinent literature indicates that the cause of death after electric shock treatment is still obscure. Selection of patients for treatment should not be indiscriminate, especially in the face of an unpromising prognosis. Electric treatment has attendant serious dangers and should not be given to patients with a history of vascular or cerebral disease.

Central Islip State Hospital

MANUAL AND MECHANICAL RESUSCITATION IN EXPERIMENTAL ASPHYXIA

Bernhard Steinberg, M.D., and Albert Dietz, Ph.D., Toledo, Ohio. In THE JOURNAL OF LABORATORY AND CLINICAL MEDICINE, 29;7;701, July, 1944

CONCLUSIONS

1. Resuscitation with high percentage of oxygen administered in acute asphyxia by a mechanical device used in our experiments resulted in a more rapid return of oxygen content in the arterial blood than in manual resuscitation.

2. Prolonged resuscitation with the mechanical device did not produce abnormal functional or tissue changes in animals.

3. Inhalation of carbon dioxide and oxygen or resuscitation with oxygen and rebreathing of expired air with the mechanical device resulted in a rapid elimination of carbon monoxide.

4. Mechanical resuscitation in acute asphyxia with the device employed in our experiments is a more efficient procedure than manual resuscitation.

SPRAINED ANKLES

John M. Wright, Captain (MC) U.S.N.R. Leon O. Parker, Commander (MC) U.S.N.R. and Thomas R. Lehan, Lieutenant Commander (MC) U.S.N.R. In UNITED STATES NAVAL MEDICAL BULLETIN, 42;6;1313 June, 1944

1. The pathologic changes in sprained ankles are of two types: (a) Complete ligamentous rupture; (b) hematoma with slight ligamentous damage.

2. The differential diagnosis can be made only by very careful physical examination, or by anteroposterior x-ray during manipulation under anesthesia.

3. The best treatment for complete ligamentous rupture is the application of a walking cast for at least 6 weeks. Reconstructive surgery may be required in chronic cases.

4. The essential treatment for the simple sprained ankle without serious ligamentous injury is: (a) Early pressure bandage; (b) limitation of the hematoma and swelling by procaine injection with massage and early use; (c) contrast baths or intermittent traction and massage for persistent swelling and stiffness.

PLANS OUTLINED FOR PROVIDING MEDICAL TRAINING AFTER WAR

A. M. A. Council Presents Recommendations For Providing Educational Facilities For Returning Medical Officers

Outlining the educational facilities required after the war for returning medical officers, Victor Johnson, M.D., and F. H. Arestad, M.D., secretary and assistant secretary, respectively, of the Council on Medical Education and Hospitals of the American Medical Association, in a report in *The Journal* of the Association for September 23 present recommendations to the hospitals and medical schools of the country for meeting the educational challenge of the postwar period.

Their report is based on studies by the Council and returns on questionnaires sent to medical officers by the Committee on Postwar Medical Service and analyzed by Lieut. Col. Harold C. Lueth, M. C., Surgeon General's Liaison Officer in the headquarters of the Association.

"Meeting the requirements of returning medical officers for additional training," Drs. Johnson and Arestad say, "is a serious responsibility which will require the continued joint efforts of the Committee on Postwar Medical Service, the Council on Medical Education and Hospitals, the Surgeons General of the Army, Navy and Public Health Service, hospitals approved for internships and residencies, the American boards in the medical specialties, medical schools, state licensing boards, the Veterans Administration, foundations, county and state medical societies, and every institution capable of providing advanced training to physicians.

"On these physicians rests a large share of the responsibility for the quality of medical care to be provided the nation in the decades following the war. Many entered the services after an abbreviated internship. Others recognize the need for further education to equip themselves to return to their former practices or to new locations in which they desire to work. . . ."

The Journal, in an editorial in the same issue, discussing the report, says:

"The report suggests ways in which efforts may be applied to meet the need. Returns on the questionnaires sent to all medical officers are now being received in numbers which clearly reflect the widespread interest in continuation training. Analysis of an early random sample has already been published. Such data are indispensable for effective planning.

"Probably 10,000 medical officers will want house officer training of six months or more. Since demobilization will probably extend over some time, the number of additional places required will probably approximate 5,000 during the first year. Apparently most expansion will be required in otolaryngology, surgery, obstetrics and gynecology and ophthalmology, which may need to double their facilities. Expansions of 50 to 70 per cent seem to be indicated in urology, internal medicine, orthopedic surgery and pediatrics.

"Somewhat fewer officers are likely to seek shorter courses; about 9,000 officers will seek full time training of one to six months' duration. In 1943-1944 there were nearly 27,000 physicians enrolled in such courses. However, over 90 per cent of these were in sort courses of about a month. Apparently more than 90 per cent of those desiring review or refresher courses will seek training in somewhat longer courses of two to six months' duration. Many more courses of that duration will be required.

"In the light of the figures given, all institutions which can contribute to meeting the need are obligated to review their resources and prepare estimates of the additional facilities they can provide, to facilitate the achievement of the program outlined. . . .

"With continuing operation of the . . . [various agencies and groups concerned] there is every reason to expect that the needs will be met. Information now being collected from all educational institutions will be made available in the near future. . . ."

In summarizing their report, Drs. Johnson and Arestad say that the Council on Medical Education and Hospitals recommends, in order to meet the educational challenge of the postwar period, that:

Every hospital approved by the Council for internships should review its present and potential facilities and be prepared on request to submit to the Council estimates of the additional physicians it can accommodate as house officers in general medical training without jeopardizing high educational standards.

Every residency and fellowship hospital approved by the Council and acceptable to the various American boards should be prepared to submit to the Council and to the respective boards estimates of the additional physicians it can accommodate as house officers in already approved residencies.

Every internship hospital not now approved by the Council for residencies should be prepared to report on such facilities it may possess as may warrant consideration for approval of residencies, particularly in those specialties requiring most expansion.

Every approved residency hospital which has not yet developed its educational programs to full capacity should consider the organization of educational residencies in specialties not yet approved by the Council.

There should be developed in approved hospitals graduate externships to provide training of short duration to discharged officers not housed at the hospital but engaged in full time hospital work.

Medical schools, societies and foundations should plan especially to meet the probable demands for full time review and refresher courses of two to six months' duration.

Appropriate work in the basic medical sciences should be included in all postwar house officer training programs.

Consistent with national security and postwar military needs, teachers who are medical officers should be demobilized for the training of discharged officers before the prospective students.

Although modification of present estimates may be required when further questionnaires have been returned from medical officers, plans by all medical educational institutions for expanded postwar facilities should commence at once.

Full use should be made of the period between the surrender of Germany and that of Japan to provide educational training for as many officers as possible while still retained on active service.

★ BUY WAR BONDS ★

REPORT SUCCESSFUL TREATMENT OF A TYPE OF SINUS INFECTION

Penicillin Brings Recovery Of Patient With Cavernous Sinus Thrombophlebitis Which Until Recently Was Universally Fatal

The successful treatment of a type of sinus infection which until a few years ago was universally fatal is reported in *The Journal of the American Medical Association* for September 2 by W. M. Nicholson, M.D., and W. B. Anderson, M.D., Durham, S. C.

Cavernous sinus thrombophlebitis is a condition in which there is an infection, at the site of a thrombus or blood clot, of the wall of a vein in the cavernous sinus, a cavity containing blood, which is located at the base of the brain in back of the eye. It generally is secondary to some other infection such as a boil or infected hair follicle. Until 1937 only seven recoveries had been reported. Since the advent of the sulfonamides several instances of recovery have been reported but the fatality rate still has been quite high.

Drs. Nicholson and Anderson report the recovery of a patient from penicillin treatment after sulfadiazine had failed. He was a farmer in whom the condition developed after receiving a smart blow across the bridge of his nose on the right nostril of which was a small boil. Thirty-eight days after admission to the hospital the patient was discharged.

In the three years following the last war more people died from famine and preventable disease than were killed in the war itself, hence the importance attached to the present organization of postwar relief. The principal regional medical officer, British Ministry of Health, holds that the lives and health of millions in Europe as well as the physique and welfare of a generation to come depends on how well this preparatory work is done. He visualizes four principal problems — the provision of food, the supply of medical necessities, the control of such diseases as typhus, malaria, tuberculosis, and dysentery, and the reestablishment of the medical, hospital, and public health services in each country.—Ed. Jour. Royal Inst. Pub. Health & Hyg.

Industrial Health

Committee On Industrial Health — Frederick W. Slobe, Chm., 2024 South Western Ave., Chicago, Frank P. Hammond, H. A. Vonachen, R. I. Barickman, C. O. Sappington, Milton H. Kronenberg.

PLACEMENT OF THE HANDICAPPED

The War Manpower Commission, in its endeavor to develop full utilization of the remaining industrial manpower for highly essential war industries, has developed several forms for appraising both the physical capacities of the worker and the characteristics of the worker. Such technique in placement is not only of value in utilizing the available manpower at present, but will be equally valuable during peace time in the placement of the returning veterans. Hence this material merits careful study.

1. Introduction: The Physical Capacities Appraisal Form, a copy of which is shown, is being introduced at the present time in the War Manpower Commission agencies of Illinois, Indiana, and Wisconsin as a coordinate part of a physical analysis technique designed to assist the War Manpower Commission in answering the question: "What specific jobs can a given individual do on a basis of his physical abilities?"

The use of this technique at the Richmond Shipyards of the Kaiser Shipbuilding Company is reported in "Current Developments Affecting the Physician's Role in Manpower Utilization"[1] and "Physical Demands and Capacities Analysis".[2] The experiments indicate that the technique of employing specialized forms to match specific physical capacities and requirements leads to a more objective utilization of workers in accordance with their physical abilities.

In general, this technique matches specific physical job requirements with an individual's pattern of physical abilities. The comparison is made in terms of a list of 27 physical activities and 27 working conditions common to both the Physical Analysis Form derived from job analyses and the Physical Capacities Appraisal Form secured from a physician.

The Physical Demands Form is used to record the job requirements in terms of physical activities, working conditions and the hazards to which a worker is exposed. The Physical capacities Appraisal Form is designed to assist physicians to record their evaluation of a worker's physical abilities in terms of the degree to which he can perform certain physical activities and can withstand specified working conditions.

2. Use: The Physical Capacities Appraisal Form will either be brought by workers or sent by the War Manpower Commission to physicians in those cases in which it either is necessary for the War Manpower Commission to secure a statement of the physical abilities of an applicant for employment, or to transfer an injured or disabled worker. In most instances, the request for a physical capacities appraisal will arise when an applicant because of ill health or because his work is too strenuous applies to the local United States Employment Service office for a statement of availability permitting him to transfer to a job in a firm other than the one in which he is or has been recently employed.

The local United States Employment Service office upon receipt of the completed form from

1. "Current Developments Affecting the Physician's Role in Manpower Utilization," Clifford Kuh, M.D., Oakland, California, and Bert Hanman, San Francisco. Reprinted, with additions, from "The Journal of the American Medical Association," May 27, 1944.
2. "Physical Demands and Capacities Analysis," Division of Occupational Analysis and Manning Tables, Bureau of Manpower Utilization, War Manpower Commission, San Francisco. Published by Permanente Foundation, Oakland, California, May 1944. (a manual for physician, job analyst and placement officer).

WAR MANPOWER COMMISSION

BUREAU OF MANPOWER UTILIZATION

PHYSICAL CAPACITIES APPRAISAL FORM

Name ..... Age ..... Sex ..... Height ..... Weight .....

PHYSICAL ACTIVITIES			WORKING CONDITIONS				
..... 1. Walking.	.....16. Throwing.		.....51. Inside.		.....66. Mechanical hazards.		
..... 2. Jumping.	.....17. Pushing.		.....52. Outside.		.....67. Moving objects.		
..... *3. Running.*	.....*18. Pulling.*		.....*53. Hot.*		.....*68. Cramped quarters.*		
..... 4. Balancing.	.....19. Handling.		.....54. Cold.		.....69. High places.		
..... 5. Climbing.	.....20. Fingering.		.....55. Sudden temp. changes.		.....70. Exposure to burns.		
..... *6. Crawling.*	.....*21. Feeling.*		.....*56. Humid.*		.....*71. Electrical hazards.*		
..... 7. Standing.	.....22. Talking.		.....57. Dry.		.....72. Explosives.		
..... 8. Turning.	.....23. Hearing.		.....58. Wet.		.....73. Radiant energy.		
..... 9. Stooping.	.....24. Seeing.		.....59. Dusty.		.....74. Toxic conditions.		
.....10. Crouching.	.....25. Color vision.		.....60. Dirty.		.....75. Working with others.		
.....*11. Kneeling.*	.....*26. Depth perception.*		.....*61. Odors.*		.....*76. Working around others.*		
.....12. Sitting.	.....27. Working speed.		.....62. Noisy.		.....77. Working alone.		
.....13. Reaching.	.....28.		.....63. Adequate lighting.		.....78.		
.....14. Lifting.	.....29.		.....64. Adequate ventilation.		.....79.		
.....15. Carrying.	.....30.		.....65. Vibration.		.....80.		

Blank space=Full capacity. √=Partial capacity. 0=No capacity.

Details of Physical Activities:

May lift, carry, handle, push, or pull up to ..... pounds ..... times per hour.

May engage in activities numbered ..... up to ⅔ of work period.

May engage in activities numbered ..... up to ⅓ of work period.

Sight .....

Hearing .....

Others .....

.....

.....

Details of Working Conditions .....

.....

.....

Diagnosis .....

Date ....., 194.... .....

U. S. Government Printing Office 16-39335-1

Physician.

the applicant's physician will match the physical capacities of the applicant with the physical demands of the job which he has left or the job to which he is to be referred. A similar comparison will be made of the environmental conditions under which the applicant can work with the working conditions actually existing on the job.

3. Instructions: *Physical Activities and Working Conditions*: In filling out these sections of the form the physician should check (✓) those physical activities for which the applicant has a limited capacity and zero (O) those physical activities for which the applicant is completely incapacitated. A similar system should be followed in marking the working conditions. Thus, a check would indicate that the applicant should not be subjected to the particular working condition during the entire work period and a zero would indicate that the applicant should not be exposed to the particular working condition at any time.

Absence of a check or zero indicates that there is no restriction upon the physical activity or working condition.

WAR MANPOWER COMMISSION
BUREAU OF MANPOWER UTILIZATION

WORKER CHARACTERISTICS FORM

Job Title ..... Schedule No. .....

Indicate the amount of each characteristic required of the worker in order to do the job satisfactorily by putting an X in the appropriate column. Following are the definitions of each level:

O — The characteristic is not required for satisfactory performance of the job.

C — A medium to very low degree of the characteristic is required in some element or elements of the job.

B — An above-average degree of the characteristic is required, either in numerous elements of the job or in the major or most skilled element.

A — A very high degree of the characteristic is required in some element of the job.

When in doubt between A and B, rate B; when in doubt between B and C, rate B; when in doubt between C and O, rate C. If some characteristic not on this list is required, write it in, rate it, and define it briefly at the bottom of the form.

AMOUNT O C B A	CHARACTERISTICS REQUIRED	AMOUNT O C B A	CHARACTERISTICS REQUIRED
....	1. Work rapidly for long periods.	....	26. Arithmetic computation.
....	2. Strength of hands.	....	27. Intelligence.
....	3. Strength of arms.	....	28. Adaptability.
....	4. Strength of back.	....	29. Ability to make decisions.
....	5. Strength of legs.	....	30. Ability to plan.
....	6. Dexterity of fingers.	....	31. Initiative.
....	7. Dexterity of hands and arms.	....	32. Understanding mechanical devices.
....	8. Dexterity of foot and leg.	....	33. Attention to many items.
....	9. Eye-hand coordination.	....	34. Oral expression.
....	10. Foot-hand-eye coordination.	....	35. Skill in written expression.
....	11. Coordination of both hands.	....	36. Tact in dealing with people.
....	12. Estimate size of objects.	....	37. Memory of names and persons.
....	13. Estimate quantity of objects.	....	38. Personal appearance.
....	14. Perceive form of objects.	....	39. Concentration amidst distractions.
....	15. Estimate speed or moving objects.	....	40. Emotional stability.
....	16. Keeness of vision.	....	41. Work under hazardous conditions.
....	17. Keeness of hearing.	....	42. Estimate quality of objects.
....	18. Sense of smell.	....	43. Unpleasant physical conditions.
....	19. Sense of taste.	....	44. Color discrimination.
....	20. Touch discrimination.	....	45. Ability to meet and deal with public.
....	21. Muscular discrimination.	....	46. Height.
....	22. Memory for details (things).	....	47. Weight.
....	23. Memory for ideas (abstracts).	....	48. .....
....	24. Memory for oral directions.	....	49. .....
....	25. Memory for written directions.	....	50. .....

DEFINITIONS FOR ADDITIONAL CHARACTERISTICS:

PHYSICAL DEMANDS FORM

Job Title ..... Occupational Code .....
Dictionary Title .....
Firm Name & Address .....
Industry ..... Industrial Code .....
Branch ..... Department .....
Company Officer ..... Analyst ..... Date .....

PHYSICAL ACTIVITIES		WORKING CONDITIONS	
..... 1. Walking.	.....16. Throwing.	..... 51. Inside.	.....66. Mechanical hazards.
..... 2. Jumping.	.....17. Pushing.	.....52. Outside.	.....67. Moving objects.
..... 3. Running.	.....18. Pulling.	.....53. Hot.	.....68. Cramped quarters.
..... 4. Balancing.	.....19. Handling.	.....54. Cold.	.....69. High places.
..... 5. Climbing.	.....20. Fingering.	.....55. Sudden temp. changes.	.....70. Exposure to burns.
..... 6. Crawling.	.....21. Feeling.	.....56. Humid.	.....71. Electrical hazards.
..... 7. Standing.	.....22. Talking.	.....57. Dry.	.....72. Explosives.
..... 8. Turning.	.....23. Hearing.	.....58. Wet.	.....73. Radiant energy.
..... 9. Stooping.	.....24. Seeing.	.....59. Dusty.	.....74. Toxic conditions.
.....10. Crouching.	.....25. Color vision.	.....60. Dirty.	.....75. Working with others.
.....11. Kneeling.	.....26. Depth perception.	.....61. Odors.	.....76. Working around others.
.....12. Sitting.	.....27. Working speed.	.....62. Noisy.	.....77. Working alone.
.....13. Reaching.	.....28.	.....63. Adequate lighting.	.....78.
.....14. Lifting.	.....29.	.....64. Adequate ventilation.	.....79.
.....15. Carrying.	.....30.	.....65. Vibration.	.....80.

DETAILS OF PHYSICAL ACTIVITIES:

The definitions used are the commonly accepted definitions of the physical activities and working conditions.

Details of Physical Activities: The section headed Details of Physical Activities is used to secure more definite information concerning the physical activities which are partially restricted for the applicant.

May Lift, Carry, Handle, Push or Pull Up to Pounds Times Per Hour: In the line beginning "May lift, carry, handle, push or pull up to ..... pounds ..... times per hour," the physician should enter the maximum number of pounds and the maximum number of times per hour when there is some restriction on the activities listed in this line.

May Engage in Activities Numbered ..... Up to 2/3 (1/3) of Work Period: The lines "May engage in activities numbered ..... up to 2/3 of work period" and "May engage in activities numbered ..... up to 1/3 of work period," are used for physical activities for which restrictions may be expressed in terms of time. In general, these are handling, climbing, jumping, running, walking, standing, stooping, crouching, kneeling, crawling, sitting and fingering. If any of the above items are checked, the physician should note the number of the item in the appropriate line if a time limit is applicable.

The WMC makes the following assumptions in using these sections: (1) an individual who cannot engage in a particular physical activity for at least 1/3 of the work period, should not undertake work involving that activity; (2) an individual who can perform a given physical activity for 2/3 of the working day, can generally work full time in a job involving that activity.

If these assumptions are invalid in the particular case, the physician should note that fact on the line marked "Others."

Sight and Hearing: The lines beginning "Sight" and "Hearing" should be used to indicate restrictions in the use of those faculties.

Others: The line beginning "Others" may be employed to present additional information to guide the placement officer and to record general limitations upon the applicant's activities.

Use of the line for the latter purpose will obviate the necessity of checking those physical activities which cannot be performed because of

a general limitation. If for example, an applicant can only do sedentary work, such information is entered on this line. It would not be necessary then to mark those physical activities which are indicative of the fact that the applicant can only do sedentary work.

Details of Working Conditions: The section headed Details of Working Conditions is used to list specific environmental factors to which the applicant should not be exposed. Usually, only two items in the "Working Conditions" section require further explanation: Item 74, Toxic Conditions, and Item 73, Radiant Energy.

Diagnosis: Since this technique of matching physical demands and physical capacities is based upon the use of the specific factors listed on the form, the physician may omit the diagnosis if it appears desirable to withhold this information.

4. Advantages of Form: — Region VI of the War Manpower Commission believes that the introduction of this form and the use of the physical analysis technique will offer the following advantages:

1. Emphasis on the specific pattern of physical capacities affords a positive approach to the problem of selective placement of handicapped workers.
2. The Physical Capacities Appraisal Form preserves the confidential nature of the physician's diagnosis.
3. The technique takes into account both the physical and environmental factors which may limit the working capacities of an individual.
4. The use of this form gives assurance that the translation of clinical data into physical capacities is made by physicians.

SULFONAMIDES ARE OF NO VALUE IN TREATMENT OF POLIOMYELITIS

Cleveland Doctor, In Letter To The Journal, Says Doctors Should Be Warned Against Their Use For Infantile Paralysis

The sulfonamide drugs are of no value in the treatment of infantile paralysis and physicians should be warned against their use for this disease, John A. Toomey, M.D., Cleveland, declares in a letter published in *The Journal of the American Medical Association* for September 2. Dr. Toomey says:

"I feel that physicians should be warned against the use of sulfonamide drugs in the treatment of poliomyelitis.

"It has been noticed clinically that when paralyses of the intestine and urinary bladder persist there are apt to be extension of the . . . paralyses. When urinary retention was produced in animals (monkeys) by the use of sulfonamide compounds, drugs which produced ureliths [kidney stones] and blockage of the ureters [urinary passages], a more massive disease was produced two or three days sooner than that which appeared in controls simultaneously injected with poliomyelitis virus.

"Rosenow had the same experience with sulfapyridine at the Mayo Clinic and reported that this drug produced an additive neurotoxic [poisonous effect on the nerves] effect.

"Recently an explosive epidemic of poliomyelitis occurred in a small town of northern Ohio. The number of patients that developed severe paralysis seemed out of proportion to the normal expectancy. Most of these patients had received sulfonamide drugs (information received from Mrs. Louise Bowers, health officer, Perrysburg, Ohio).

"Recently a 12 year old girl had signs of meningeal irritation [of the membrane enveloping the brain and spinal cord], but no sign of any muscle involvement save in one leaf of the soft palate. The reflexes were hyperactive; the child was not acutely ill. . . . The prognosis seemed good whether the condition was poliomyelitis or meningitis. Sulfadiazine was started. Twelve hours later and after 12 Gm. of sulfadiazine had been given, a massive extension of paralysis suddenly developed, the throat muscles and intercostals [muscles between the ribs] all becoming affected within an hour. This sudden explosive extension in an otherwise nearly normal patient had not been our previous experience in this type of case.

"The sulfonamide drugs are of no value in poliomyelitis. Nor does penicillin help much in our experience, although we have not noticed that it does harm."

News of the State

PERSONALS · COMING EVENTS · MARRIAGES · DEATHS

★ WAR SERVICE ACTIVITIES ★

COOK COUNTY

Capt. A. E. Ablaza and Capt. Samuel Levin, members of the Chicago Medical Society, had both practiced in Chicago for 16 years but never met until they attended the field medical service school in Carlisle, Pa. in 1943. They are now in France and frequently find themselves in the roles of country doctors when French farmers appear at their medical tent for treatment and insist on paying with tomatoes, eggs and other produce. Capt. Levin reports, according to the Chicago Tribune of September 6, "When we have a lull in treating American wounded, the French line up and beg us to attend their ills. We take care of as many as we can."

Capt. Walter Block, member of the Chicago Medical Society, a battalion surgeon with the American Rangers has been awarded the Silver Star. He toiled for 66 hours under a concentrated hail of German gunfire during the initial invasion of the French Coast to evacuate 50 Yank casualties.

DEWITT COUNTY

H. L. Meltzer of Clinton who has been stationed in Hawaii since before the attack on Pearl Harbor just returned to his post after a furlough, his first since entering the service.

JASPER COUNTY

G. B. Brown of Newton has been commissioned a Captain in the United States Army Medical Corps and has reported to a hospital at Sheridan, Wyoming. He formerly was connected with the Peoria Health Department and at one time was managing officer of Jacksonville State Hospital.

KANE COUNTY

Lt. (j.g.) Robert M. Kennedy, former practicing physician and obstetrician in Elgin, ship's doctor on the destroyer Warrington, refused to abandon patients who could not be moved, and went down with the ship during the September 13 hurricane in the Atlantic. He was born in 1910, graduated from Northwestern 1937, married, had two children. He located in Elgin about May, 1942 and was commissioned in the Navy on November 29, 1943. He served as a missionary in Ceylon for several years before locating in Elgin.

LEE COUNTY

Dr. Samuel S. Reinglass, Dixon, has resigned as health officer of district number three to enter military service.

McDONOUGH COUNTY

Capt. C. L. Weston of Macomb who was with the army in North Africa, the Anzio Beachhead and on up the "boot" reports some harrowing experiences. He has been with a field hospital and on the Anzio Beachhead was assisting another soldier with an operation when the Germans bombed the Red Cross hospital and the nurse assisting with the operation was killed.

PEORIA COUNTY

At the present time, sixty-three members of the Peoria Medical Society are in the service of their country. This does not include several doctors from the Peoria area who were not members of the Society and three members who received medical discharges.

Lowell Kannapel has received a promotion and now wears the Gold Oak Leaf of a Major. Henry Wilson recently received his promotion to Captain.

ROCK ISLAND COUNTY

Francis X. Meier of Milan has been commissioned a first lieutenant in the army medical corps and reported on October 6th to Carlisle Barracks, Pa. Dr. Meier who graduated from

the University of Munich, Germany in 1936 came to America in 1937. He received his Illinois license in 1939 and served as a resident physician at Moline Public Hospital before beginning his Milan Practice in July 1939. He is a member of the Rock Island Medical Society.

WINNEBAGO COUNTY

Laying aside his uniform after nearly two years of military service, Captain Bernard E. Bolotoff of Rockford has opened an office in the Mead Building, Rockford for the general practice of medicine. He was retired due to physical disabilities caused by complications that developed during an illness contracted while serving with the army medical corps in the central and southwest Pacific.

WOODFORD COUNTY

Major Arnold Claycomb MC AUS formerly of Minonk is now Chief of Surgery, Bowman AHF Station Hospital, Bowman AAB, Louisville, Kentucky.

Colonel Robert H. Kennedy, former Director of Surgery at Beekman Hospital, New York City, and attending surgeon at the New York Post-Graduate Hospital, has recently been appointed chief of surgical service at Mayo General Hospital, according to an announcement by Colonel H. L. Krafft, commanding officer. Colonel Kennedy, a veteran of World War I succeeds Colonel Emery Neff (of Moline, Illinois) former surgical chief, who left for treatment Percy Jones General Hospital.

While in Washington, Captain Marian Grimes, ANC, spoke over radio station WTOP on her experiences in Australia and New Guinea. Her broadcast was in connection with the Army Nurse Corps recruiting program. Captain Grimes, who has been on temporary duty in the Office of the Surgeon General, has now returned to her permanent station at Fort Sheridan, Illinois.

GRADUATE MEETINGS AND COURSES

POST GRADUATE CONFERENCE

Orlandon Hotel — Decatur

October 26, 1944

All doctors of central Illinois are invited to a special scientific program which has been planned to bring the latest in timely subjects to their attention. No registration fee, but reservations for luncheon and dinner should be made with Dr. Wallace Muncie, Decatur, Secretary of the Macon County Medical Society.

12:30-1:30 P.M.—Complimentary luncheon

1:30-2:15 P.M.—"Recognition and Management of Coronary Disease"
O. P. J. Falk, M.D.—St. Louis

2:15-3:00 P.M.—"Industrial Surgery"
Frederick W. Slobe, M.D.—Chicago

3:00-3:45 P.M.—"The Present Day Treatment of Syphilis of the Central Nervous System"
Clarence A. Neymann, M.D.—Chicago

3:45-4:30 P.M.—"Amebiasis"
Paul L. Shallenberger, Major MC, Chief Gastroenterology Section Gardiner General Hospital, Chicago

4:30-5:15 P.M.—Round Tables led by the above speakers as follows:
"Diagnosis & Treatment of Heart Conditions Occurring After Middle Age"—M. E. Rose, Decatur—Chairman
"Industrial Surgery"—Dwight Pence, Decatur—Chairman
"Child Behavior Problems"—Scott Wilkinson, Decatur—Chairman
"Tropical Diseases"—O. O. Stanley, Decatur—Chairman

6:00 P.M.—Dinner—$1.50 per plate

7:30 P.M.—"Neuropsychiatric Problems and the War"
Lt. Col. W. P. Richardson, MC Chief Neuropsychiatric Section of the Gardiner General Hospital, Chicago

---

The following War-Time Graduate Medical Meetings under the auspices of the American Medical Association, American College of Surgeons and the American College of Physcians were held in Illinois on October 4th.

Mayo General Hospital—"Blood Dyscrasias"
Louis R. Limarzi and Howard L. Alt

Camp Ellis—"Orthopedic Problems of General Interest"
Edward L. Compere and Paul B. Magnuson

Chanute Field—"Gall Bladder and Liver Disease"
Andrew C. Ivy and Walter L. Palmer

The Institute of Medicine of Chicago will hold its postgraduate assembly, November 1-2, at the Palmer House. The program will cover "Nervous and Mental Diseases and War" and will be devoted to phases of neurology, psychiatry and neurosurgery that are of particular importance to clinicians, specialists and lay workers. There will be a registration fee of $5 for all except those in uniform. Among the speakers will be:

Dr. Samuel W. Hamilton, Washington, D. C., Psychiatry Before World War II.

Dr. Winfred Overholser, Washington, Civilian Mental Health in Wartime.

Dr. C. Charles Burlingame, Hartford, Conn., Present and Future Effects of War Neuroses.

Dr. Bernard J. Alpers, Philadelphia, War and Nervous Disorders.

Dr. Cobb Pilcher, Nashville, Tenn., Civilian Advances and Investigations in Neurosurgery During the War.

Col. William C. Menninger, M. C., The Mentally Unfit: Detection, Elimination and Disposal.

Lieut. Col. Roy R. Grinker, Psychiatric Disorders in Combat Crews Overseas and in Returnees.
Dr. Edwin G. Zabriskie, New York, Nervous Disorders in the Armed Forces.
Capt. Winchell M. Craig, M. C., Injuries to the Central Nervous System.
Dr. Howard C. Naffziger, San Francisco, Injuries to the Peripheral Nervous System.
Luther E. Woodward, Ph.D., New York, Social Readjustment of Returning Veterans.
Lieut. Comdr. Howard P. Rome (MC), The War and Its Psychiatric Problems.
Dr. David J. Margolis, Chicago, Compensation Laws and the Veterans Administration.
Dr. Sidney I. Schwab, St. Louis, Residuals of Neuropsychiatric Disorders.
Dr. Ernest Sachs, St. Louis, Residuals of Neurosurgical Disorders.

The program will include a series of panel discussions on war neuroses or battle fatigue? war injuries to the nervous system, does war modify the behavior of the civilian population? and who are the mentally unfit for military service? The first evening session will include a neuropsychiatric "information please" program with Dr. Foster Kennedy, New York, as moderator. On the second evening Dr. Edward A. Strecker, Philadelphia, will deliver the seventeenth annual Pasteur lecture of the institute on "War Psychiatry and Its Influence on Postwar Psychiatry and Civilization."

The American College of Physicians is holding a series of six Post-Graduate Courses in various sections of the country. Course Number 5 on Special Phases of Internal Medicine will be held in Thorne Hall of Northwestern University, Chicago October 23-November 4 and will be limited to a registration of sixty. This course offers an unusual opportunity for physicians to familiarize themselves with recent developments in various fields of Internal Medicine. The faculty of 108 men includes many of the most outstanding physicians, not only in Chicago, but also from other parts of the country. Where possible, clinical discussions will be illustrated by demonstration of patients. The Course will close with a Regional Meeting of the American College of Physicians at the Drake Hotel, Chicago on November 4.

ILLINOIS PHYSICIANS INVITED TO VISIT TUMOR CLINICS

During the past twenty years great advancement has been made in educating the public regarding the dangers of cancer. The intelligent layman now knows that accessible cancer of some types can be cured if treated early and adequately. This is a direct challenge to the medical profession. In order that members of the Illinois State Medical Society may avail themselves of opportunities to learn something concerning the modern methods of diagnosis and treatment of this disease, the Cancer Committee of the Chicago Medical Society has asked each of the Tumor Clinics in Chicago that have been approved by the American College of Surgeons if they will permit members of the Society to visit their clinics in order to learn new methods of procedure in diangosis and treatment. The following clinics have stated that they will welcome members to their session at any time.

Cancer Clinic of Cook County Hospital: 2 P. M. Friday afternoons. "If the doctors so desire, they may be permitted to visit our X-Ray Cancer Therapy Department on the same day to observe the results of this form of treatment."

Cancer Clinic of The Little Company of Mary Hospital: 10:00 A. M., Saturday mornings. "We would appreciate having visiting physicians make an appointment before coming so that we might advise them on the number and variety of cases to be presented."

Mercy Hospital Institute of Radiation Therapy: 8 to 10 A. M., Tuesdays and Thursdays, 8 to 9 A. M.

Tumor Clinic of Michael Reese Hospital: 1:30 P. M., each Tuesday in the Mandel Clinic Building.

Tumor Clinic of Mount Sinai Hospital: 11 A. M. on the last Saturday of the month.

Patterson Tumor Clinic of Northwestern University Medical School: 2 to 4 P. M. each Monday in the clinic rooms of the Medical School. "From 4 to 5 following the clinic there is a lecture and demonstration to a division of the senior class. Physicians are welcome to attend these sessions."

Tumor Clinic of Norwegian-American Hospital: 11 A. M. on the second and fourth Thursday of each month.

Cancer Clinic of the Presbyterian Hospital: 12 M. every Wednesday in the x-ray therapy department of the hospital.

Cancer Clinic of Provident Hospital: Diagnostic clinic at 11 A. M. on the second and fourth Thursday of each month, first floor, Main Building, east end of east wing; Follow-up clinic, first Tuesday of each month, 2 P. M., second floor of the Clinic Building.

Tumor Clinic of the University of Chicago: "Irradiation therapy is being conducted all day, every day, except Saturday afternoons and Sundays; Out Patient Department, 2 to 5 P. M., Mondays, Wednesdays and Fridays."

SPEAKERS FOR SCIENTIFIC MEETINGS

The Scientific Service Committee of the Illinois State Medical Society has prepared a new list of suggested speakers and subjects for scientific programs. The list has been sent to presidents and secretaries of county societies. Copies are available in the office of the Committee at 30 North Michigan Avenue, Chicago 2. If you are responsible for any medical programs during the year, this list may offer some excellent ideas and material.

GENERAL

CHAMPAIGN COUNTY

Dr. L. E. Messman, formerly of Onargo, has joined the staff of Carle Memorial Hospital Clinic, as of September 1. He spent two years and seven months in the army medical corps, serving overseas. He was given a medical discharge in November, 1943 and has been in the Presbyterian Hospital, Chicago, since that time doing special work in obstetrics and gynecology. He is a graduate of the University of Illinois College of Medicine and interned at the Lutheran Deaconess Hospital, Chicago. He was also a resident at Presbyterian Hospital.

COLES COUNTY

Dr. L. A. Neal of Mattoon has withdrawn as Republican candidate for coroner of Coles County and has gone to Albuquerque, N. M. for his health.

COOK COUNTY

Dr. Orlen J. Johnson, Assistant Secretary of the Council on Industrial Health of the American Medical Association, Chicago has resigned to enter a residency in surgery at St. Luke's Hospital, effective September 29. Dr. Johnson graduated at the University of Michigan Medical School, Ann Arbor, in 1930.

W. B. Saunders has announced to the medical profession the appointment of Mr. Willard C. Shepard as Art Editor. He is distinguished as one of the foremost medical artists in America. Mr. Shepard has been Medical Artist to Rush Medical College and to the Presbyterian Hospital since 1916, and a general faculty member of the Department of Illustration of the University of Illinois College of Medicine for the past several years.

Dr. Rosanna N. McKenney, a member of the staff of St. Francis Hospital, Evanston, was named as new physician for the district 76 schools, succeeding Dr. Rose Jirinec, who resigned last spring to devote her time to private practice. Dr. McKenney, who graduated from the school of medicine of Loyola University, has been practicing on the North Shore for fifteen years. She has been girls' physician at New Trier High School for many years and will continue that work in addition to her duties in Evanston.

Dr. J. J. Moore, President of the Chicago Medical Society and Treasurer of the American Medical Association presided at the Assembly Dinner in connection with the International Medical Assembly meeting at the Palmer House on October 19th. He introduced Brigadier General Fred W. Rankin, Consulting Surgeon, Office of the Surgeon General and Dr. Walter H. Judd, House of Representatives, Washington, D. C. and Minneapolis, Minnesota.

On October 12 a memorial convocation for Dr. Sanford R. Gifford, professor and chairman of the department of ophthalmology at Northwestern University Medical School, was held at Thorne Hall on the downtown campus of Northwestern University at 4:30. Dr. Irving S. Cutter presided at the convocation and Anan Raymond, LL.B., spoke.

Dr. Amedeo S. Marrazzi has resigned as professor and head of the department of pharmacology, Loyola University School of Medicine, effective November 15 to accept a similar position at Wayne University College of Medicine, Detroit. Dr. Marrazzi graduated at the Bellevue Hospital Medical College in 1928 and has been identified with Loyola University since 1943.

Announcement has been made of the retirement of Dr. Julius Hess as Professor and Head of the Department of Pediatrics at the University of Illinois. He has served the School of Medicine for 30 years and has reached the compulsory retirement age.

A gold-key in recognition of outstanding contributions and service to the science of physical medicine was awarded to Dr. Herman L. Kretschmer of Chicago at the 23rd Annual Convention of the American Congress of Physical Therapy, September 7th in Cleveland.

A legacy estimated at $50,000 was left to the Shriners Crippled Children's Hospital of Chicago by the late C. Alison Curry, a retired court reporter.

The Forty-Fourth Annual Dinner of the Chicago Surgical Society and the Sixteenth Annual Arthur Dean Bevan Lecture was presented by Dr. Howard C. Naffziger of San Francisco, California on the evening of October 6th in Chicago. The title of Dr. Naffziger's lecture was "Exophthalmos and the Thyroid: Experiences with Major Surgery of the Orbit."

The July issue of *Gastroenterology*, the official journal of the American Gastroenterological Association, was dedicated to Dr. Anton J. Carlson, recipient of the association's Friedenwald Medal for 1944 and emeritus professor of physiology, University of Chicago School of Medicine, since 1940. In addition to carrying scientific material, the journal includes editorial tributes to Dr. Carlson.

The will of Mrs. Anna L. Bevan, widow of Dr. Arthur Dean Bevan, disposes of $550,000, most of which will go into a trust fund benefiting the Presbyterian Hospital of Chicago, where her husband was for many years chief surgeon. Mrs. Bevan died July 31. Three bequests to charity include $10,000 to the Country Home for Convalescent Crippled Children, West Chicago, $5,000 to the Visiting Nurse Association and $5,000 to the Ridge Farm Preventorium of Lake Forest. In addition there is a provision for $10,000 to set up the Arthur Dean Bevan Endowment for the Hospital Association of Lake Forest, the income to be used perpetually for teaching and research in the hospital's surgery department. The residue of the estate, after other bequests, will approximate $458,000 and will go into a trust fund with the First National Bank of Chicago as trustee, the income to go perpetually to the Presbyterian Hospital for teaching and research in surgery. After the death of one beneficiary of the will, the money provided will go to the Presbyterian Hospital. The trust also will be known as the Arthur Dean Bevan Endowment Fund.

As soon as building restrictions are lifted, G. D. Searle and Company, manufacturer of pharmaceuticals, plans to construct at least one additional building on a recently acquired 5½ acre tract in Skokie which adjoins its present property and on which are located the Searle Research and Manufacturing Laboratories. It is said that the increased research and manufacturing facilities are necessary in view of the continuing rapid expansion of the firm's business, which the present laboratories, completed in March 1942, can no longer accommodate.

Dr. Jean Paul Fernel was named August 21 in a criminal information filed before Federal Judge Michael L. Igoe that charged twenty-three counts of violating the Federal Food, Drug and Cosmetic Act. The action alleged that Dr. Fernel had engaged in a mail order business "purveying medical preparations that the government charges are misbranded," according to newspaper reports. It is further stated that Dr. Fernel was found guilty last November of similar charges (THE JOURNAL, Nov. 27, 1943, p. 849), was sentenced to one year in the county jail and was fined $500. He is said to be now out on bail pending an appeal to the U. S. Circuit Court of Appeals.

Amante Rongetti, whose license to practice medicine was revoked in 1932 when he was sent to the state prison at Joliet following his conviction of manslaughter, was sentenced August 30 to three months in the county jail for practicing medicine without a license and fined $500. Newspapers reported that the sentence was imposed by Judge Russell W. Keeney of Du Page County sitting in county court. Rongetti is also reported to have served a term in the federal penitentiary at Leavenworth for violating the federal narcotic act. At the trial, June 14, Rongetti was found guilty by a jury after an inspector for the state department of registration and education testified that he had prescribed distilled water for a "supposed kidney ailment." Ray E. Lane, Rongetti's attorney, said he would appeal.

Dr. Raymond B. Allen, dean, University of Illinois College of Medicine, announced July 31 a number of changes on the medical faculty, among others, effective September 1:

Dr. Julius Hays Hess, who has been a member of the faculty for thirty years, retiring on account of age, as professor and head of the department of pediatrics. He will carry the title professor emeritus.

Dr. Henry George Poncher promoted to professor and head of the department of pediatrics to succeed Dr. Hess.

Dr. Milan Vaclav Novak to professor and head of the department of bacteriology and public health.

Dr. Yngve Joranson to associate professor emeritus, department of anatomy.

Dr. Aaron Arkin to professor, department of medicine (Rush).

Dr. Richard Leos Jenkins to acting head and associate professor of psychiatry.

Chester William Darrow, Ph.D., to associate professor, department of criminology, social hygiene and medical jurisprudence.

Dr. Norris Julius Heckel, to associate professor, department of surgery.

Dr. John Michael Dorsey to assistant professor, department of surgery (Rush).

Dr. Noah D. Fabricant to assistant professor, department of laryngology, rhinology and otology.

Dr. Edward A. Piszczek to assistant professor, department of bacteriology and public health.

James Clarence Plagge, Ph.D., to assistant professor, department of anatomy.

Dr. John Van Prohaska to assistant professor, department of surgery.

Dr. Anita E. Rapoport to associate and associate anesthetist, department of surgery and Research and Educational Hospital.

Dr. Boris S. Ury to associate, department of psychiatry.

CRAWFORD COUNTY

L. P. Sloan of Oblong is the father of three sons who are physicians and his only daughter recently married a physician, making a total of five in the profession of medicine.

EDGAR COUNTY

Dr. Charles A. McClelland who came from Cleveland, Ohio to take care of the department of internal medicine at the Paris Hospital, Paris, Illinois is returning to Cleveland after two years to go into private practice.

GREENE COUNTY

The regular quarterly meeting of the Greene County Medical Society held in White Hall on

September 8th was addressed by Dr. George Vernon of the Palmer Sanatorium of Springfield who spoke on Pulmonary Tuberculosis. Dentists of Greene County were guests.

MACON COUNTY

Plans are under way to establish a memorial fund in honor of the late Dr. Wilbur Stuart Wood, Decatur. The memorial will take the form of a fund to be used to purchase orthopedic equipment in the Decatur and Macon County Hospital, where Dr. Wood had been active for many years. Dr. Wood died August 7.

MADISON COUNTY

Dr. A. J. Kotkis of St. Louis spoke on "Some Problems of Physical Medicine in the Field of Therapeutics" at the September 1st meeting of the Madison County Medical Society held in Granite City.

SANGAMON COUNTY

Dr. J. A. Stocker joined the staff of St. John's Sanatorium, Springfield, as Assistant Medical Advisor on June 1, 1944. Dr. Stocker, a native Minnesotan, received his medical education at the University of Minnesota. He spent a year in general practice in that state, and thereafter joined the staff of the Missouri State Sanatorium for Tuberculosis at Mount Vernon in 1935. At the time of his resignation, Dr. Stocker was superintendent of the Missouri Sanatorium.

WILL-GRUNDY COUNTY

Doctors of Will-Grundy counties meet every Friday noon at 12:15, Louis Joliet Hotel, Joliet for luncheon and a scientific program. Speakers for these meetings are supplied by the Scientific Service Committee of the Illinois State Medical Society and subjects cover the various fields of medicine and surgery.

CANCER SOCIETY CHANGES ITS NAME

Indicating its broader and more active program, the American Society for the Control of Cancer, which since 1913 has been engaged in educating the public concerning that disease, now announces a legal change of its name. The new name, *American Cancer Society*, reflects the decision made by the Board of Directors that any and all matters connected with the fight against cancer are of immediate and active concern to the Society.

The Society will greatly expand and extend its efforts not only to educate the public but to obtain from the public funds for cancer research, diagnosis and treatment, and education. The Society will not itself conduct any research or own or operate any hospitals, clinics or laboratories. It will, however, raise and distribute funds to aid such institutions and projects as may be approved by its Board of Directors.

At the same time the Society anounces a change also in the name of its lay educational organization. This since its inception in 1936 has been called the Women's Field Army. It is now to be known as *The Field Army*, in recognition of the fact that men as well as women are vitally concerned in the work.

DR. ALPHONSE McMAHON OF ST. LOUIS HONORED

Captain Alphonse McMahon, M.C., U. S. Navy, of St. Louis, recently returned from 18 months service in the South Pacific and now on duty at the U. S. Naval Hospital at the National Naval Medical Center, Bethesda, Maryland, has been honored by the Mississippi Valley Medical Society as its Distinguished Service Award Recipient for 1944. The award, consisting of a gold medal and certificate, was presented to Dr. McMahon by the Society's president, Dr. C. Paul White, at the annual banquet on the occasion of the 10th Annual Meeting held at the Pere Marquette Hotel, Peoria, Sept. 27.

DEATHS

FRANCIS - WILLIAM BARTON, Danville; Columbia University College of Physicians and Surgeons, 1901. In 1909 he took two years to study in medical and surgical clinics in Paris, Vienna, Berlin and London. During World War I he served as a major with the A.E.F. He was district surgeon for the Chicago & Eastern Illinois Railroad for 40 years. Died September 14, 1944 at the age of 70.

LT. COL. MELBOURNE W. BOYNTON, Chicago; Rush Medical College, 1935. Was graduated from the parachute school at Ft. Benning, Georgia, last year and since being assigned to the office of flying safety, he had made several experimental jumps to test landing procedures. He was attempting to develop safety procedures for air crews forced to bail out at high altitudes. He plunged eight miles to his death when his parachute failed to open in a scientific test on August 19, 1944 at Clinton County Army Air Field, Wilmington, Ohio. He was 39 years old.

FRANCIS J. COUGHLIN, Aurora; Northwestern University Medical School, 1901. Former health commissioner of Aurora. Died September 22nd, 1944 aged 68.

HUGH LOYD DAVISON, Urbana; University of Pennsylvania School of Medicine, 1924. Served in World War I specializing in surgery and urology. He came to Urbana in 1931 where he helped create the Carle hospital clinic. Died of a heart attack while on a vacation, August 24, 1944. He was 47 years of age.

ORLANDO A. DONNELLY, Chicago; Bennett Loyola University, 1913. Served as a captain in World War I. Died of a heart ailment in Hines Veterans' hospital, September 6, 1944, aged 70.

JOHN ADAIR ELLIOTT, Chicago; Jenner Medical College, 1908. Practiced medicine in Chicago for 35 years. Died September 26, 1944, at the age of 66.

ARTHUR E. GILSTER, Chicago; Hahnemann Medical College and Hospital, 1910. Was a physician and surgeon in Chicago for 30 years. Died September 14, 1944 at the age of 57.

LESTER PAUL HULICK, Mansfield; Southwest School of Medicine and Hospital, Mo., 1925. Had practiced medicine in Mansfield for 15 to 20 years. He had been missing from his home for four days. His body was discovered in Sangamon forest preserve on August 24, 1944. He was 46 years of age.

RUFUS HENRY MAIN, Barry; Missouri Medical College, 1894. Had practiced medicine in Barry for 50 years. Had been in ill health for a long time and was found dead in his office from a self-inflicted gun shot wound August 20, 1944. He was 76 years of age.

LEON J. MAY, Anna; Kentucky School of Medicine, Louisville, 1905. Superintendent of Anna State Hospital. Died September 24, 1944 at the age of 68.

FREDERICK BROWN MOOREHEAD, Chicago; Rush Medical College, 1906. Was professor of oral surgery and head of the Department of Oral and plastic surgery, University of Illinois College of Medicine; professor of oral and plastic surgery at the University of Illinois College of Dentistry; attending oral and plastic surgeon, Presbyterian Hospital and Home for Destitute Crippled Children. Died in Presbyterian Hospital after an illness of many months August 29, 1944, aged 68 years.

GEORGE W. NESBITT, Sycamore; Northwestern University Medical School, 1892. Had practiced medicine in Sycamore more than 50 years. In March, 1943, he was awarded the "Fifty Year Pin" by the DeKalb County Medical Society. Died following a paralytic stroke August 22nd, 1944, aged 76.

WARD E. POTTER, Oak Park; University of Illinois College of Medicine, 1900. Had practiced medicine in Oak Park for 40 years until he moved south three years ago upon retiring. As a major in World War I he was credited with perfecting a new treatment for wounds. Died September 14, 1944 at the age of 68.

ARTHUR EDWIN SHELL, Clinton; University of Illinois College of Medicine, 1915. Had been ill and out of practice for some time. Died in St. James Hospital, Chicago Heights, September 3, 1944, at the age of 55.

RAYMOND V. SHROBA, Joliet; Loyola University School of Medicine, 1928. He had practiced medicine in Joliet for 16 years. Was drowned in the Fox River while rescuing his niece. The Shroba family were vacationing at the Busby camp which is about four miles southwest of Plano. The drowning occurred August 14, 1944. Dr. Shroba was 41 years old.

LOUIS LEO STEINER, Danville; University of Illinois College of Medicine, 1908. Began his practice in Deland, Illinois, coming to Danville in 1913. Died as the result of a heart attack August 19, 1944 while vacationing at Petosky, Michigan. He was 65 years old.

CARL P. STRUVE, South Elgin; Northwestern University Medical School, 1904. Had practiced medicine 37 years in South Elgin area. Former president of Kane County Medical Society. Died September 19, 1944 at the age of 66.

DANIEL D. VAN VOORHIS, Beecher; Bennett College of Eclectic Medicine and Surgery, 1893. Was surgeon for the Chicago & Eastern Illinois railroad for the last 35 years. Was killed when the automobile he was driving was struck by a truck September 12, 1944. He was 70 years old.

FRANCIS R. VON NAHOWSKI, Chicago; Northwestern University Medical School, 1921. Attending surgeon at Ravenswood Hospital. Died September 15, 1944 of a heart ailment at a hospital in Portage, Wisconsin. He was 48 years old.

GEORGE F. WAY, Urbana; University of Illinois College of Medicine, 1911. Was an Urbana physician for 30 years. Died after an illness of nine months on August 14, 1944, aged 58.

EARL E. WILCOX, Chicago; Hahnemann Medical College and Hospital, 1908. Had practiced medicine on the south side for 30 years. Died in Jackson Park Hospital September 16, 1944, aged 58.

SAMUEL E. WILLIAMS, Manlius; University of Illinois College of Medicine, 1893. Practiced medicine in New Bedford for 20 years, then went to Manlius. Died August 27, 1944, at the age of 78.

Penicillin — Florey summarizes the clinical status of penicillin by stating that present evidence indicates that it is useful: (1) as a preventive of infection in wounds; (2) in the promotion of healing in burns and for ensuring the success of skin grafts; (3) in infections due to sensitive organisms, either chronic or of such severity as to render the prospect of death likely, which have not responded to other forms of treatment; (4) in acute infections due to sensitive organisms; (5) in the rapid curing of gonorrhea, including sulfonamide-resisting cases; (6) in pneumonia, and (7) probably in gas gangrene. More recently penicillin has also been found to be highly effective in syphilis. It has already been established that penicillin resistance may occur, in which case artificial fever may help as an adjunct.

While penicillin is the most dramatic antibiotic, there is reason to believe that other related agents may be found which will be even more satisfactory clinically since they may be effective against a wider variety of organisms than penicillin.—*Leake, Texas States J. Med., July* 1944.

P. R. N.

The Jocular Jingles of C. G. F.
by
Charles G. Farnum M. D.
Peoria, Ill.

AUTUMN

Again the cycle of the seasons bringeth the Autumn of the year.

Vegetation hath passed its period of fruition and now fadeth and shortly its period of hibernation cometh.

Each leaf taketh one last gay flare before it disintegrateth and with its multiudinous fellows colorfully decketh the hills with yellows, reds and browns before it falleth to earth where howling winds blow it and its companions into sodden heaps and the man with the rake gathereth all together for the burning. And as he raketh he forgetteth the restful shade from summer's blazing sun that leafy trees provide. Instead he heapeth invectives upon all leaves in general and longeth for a strong west wind that would take all to the domicile of his neighbor. But such a wind cometh not. Instead a laughing south wind springeth up and merrily scattereth his piles of leaves over the areas that he hath erstwhile raked.

The ardent gardener gazeth with gloom on his frosted plots and realizeth that the season hath become a closed book. He remembereth not the wind that withereth, the sun that burneth nor the horde of bugs and worms that eateth. He likewise forgetteth the aching muscles and the perspiring brow and the sparse return that gardening effort bringeth.

Instead his imagination carryeth him to the coming springtime where once again he digeth in the warm but unresponsive soil and planteth seeds which bear not.

Whereupon he sendeth for many seed catalogs and thus prepareth himself for his winter's reading.

The base ball fan who shortly ago sat sweltering in a blistering sun and with raucous voice berated the visiting team and cast vile aspersions at the umpire and his immediate forbears now sitteth shivering in the bleachers and shouteth wildly at sturdy youths who commit mayhem in the name of Alma Mater. His voice now hath a more frog like quality as he giveth advice with generosity and enthusiasm to the quarter back of the local team.

The householder thinketh of autumn only in terms of screens to be taken down and storm windows to be put up, of leaves to be raked and annuals to be bedded down for the winter. He contemplateth fuel bills and galoshes. Prestone and tire chains. His mind projecteth itself in the not distant future and he shuddereth as he seeth himself shoveling snow and fighting wintry blasts.

The duck hunter riseth long before the dawn and hieth himself to the marshes by the water courses where he wadeth in icy waters and siteth long hours, half frozen, in a blind and hopeth that he may slaughter an over-flying bird of passage. This is ever highly problematical. His only surety is a loss of time, a sizeable expenditure, many stiffened joints and a tenacious cold.

Yet when he computeth the cost, verily he is satisfied. That is what maketh him a duck hunter.

The golfer fareth forth in chilling winds in the vain hope that he may put two good nines together and assemble a creditable score before the season endeth. But he doeth nothing that resembleth it. However he still hath hope remaining, without which no man playeth golf.

Migratory birds assemble in chattering flocks in preparation for their journey to more auspicious climes where the sun is warm and life is one of ease and contentment.

And as one gazeth at these flocks of care free birds he meditateth on the bludgeonings of fate that maketh him to winter here in the bleak and ruthless northland, a fate that maketh his abiding place a fixed one which is so wholly at variance with his migratory instincts and desires. Of a truth necessity is a hard task-master.

Verily Autumn hath come and as one gazeth at the colorings of the foliage in a brilliant sun he becometh an exalted person and when an autumnal haze softeneth these colorings to that of an ancient tapestry peace cometh into his being and tranquility encompasseth his soul.

Borden General Hospital, Chickasha, Oklahoma, has installed electro-acoustical apparatus enabling it to fit the individual patient with the best combination of manufactured hearing aids. Such equipment is rarely found in civilian institutions and represents a progressive step in the aural rehabilitation program. Hoff General Hospital, Santa Barbara, California and Deshon General Hospital, Butler, Pennsylvania, will be similarly equipped in the near future.

NONCHALANCE

A gangster rushed into a saloon shooting right and left, yelling, "All you dirty skunks get outta here!"

The customers fled in the hail of bullets — all except an Englishman who stood at the bar calmly finishing his drink.

"Well?" snapped the gangster.

"Well," replied the Englishman, "there certainly were a lot of them, weren't there?"